THE BUILDER

INCORPORATING

"ARCHITECTURE" AND "THE BRITISH ARCHITECT"

Vol. CLV NOVEMBER 25 1938 No. 4999

PROPOSED NEW HEADQUARTERS, CLAPHAM, FOR THE NATIONAL UNION OF SEAMEN.

The new offices for the National Union of Seamen are contained in the ground and first floors of the proposed new building situated at the corner of Old Town and Grafton Square, Clapham. It will be a steel-framed structure and special care has been taken in its design to show deference to the existing Georgian architecture prevalent in the neighbourhood. The offices contain—in addition to the board room, committee room and suite of rooms for the executive officers—departments for registration, national health, library, the usual clerical offices and a large assembly room. The upper portion of the building will contain 31 flats of varying sizes.

The architects are MESSRS. L. A. CULLIFORD & PARTNERS, F. and AA.R.I.B.A. This new building will be commenced almost immediately after Christmas.

COMING EVENTS

Friday, November 25.

Institution of Heating and Ventilating Engineers (Scottish Branch). Mr. F. Forster on "Some Developments in Gas Fired Boiler Practice with particular reference to the use in Gas Boilers of the Sinuflo Tube." 39, Elmbank-crescent, Glasgow. 7.30 p.m.

Friday-Sunday, November 25-27.

National Housing and Town Planning Council. Conference. Royal Hall, Harrogate.

Saturday, November 26.

London Association of Builders' Foremen and Clerks of Works. Annual Dinner. Connaught Rooms, W.C.2. 6.30 p.m.

Monday, November 28.

National Federation of Specialists and Sub-contractors. Fourth Annual Banquet. Park-lane Hotel, W.1. 6.30 p.m.

Institute of Welding (Scottish Branch). Mr. H. Harris on "Pressure Vessel Welding." At the Institution of Engineers and Shipbuilders, Glasgow. 7.30 p.m.

Tuesday, November 29.

Architectural Association. Mr. T. S. Tait on "The Empire Exhibition, Scotland, 1938." 8.30 p.m.

Institution of Civil Engineers. Mr. R. R. Liddell on "Improvements at the Royal Docks, Port of London Authority." 6 p.m.

Wednesday, November 30.

Design and Industries Association. Mr. Darcy Braddell on "Planning and Decoration in the Home." School of Art, Manchester. 7.15 p.m.

L.C.C. Central School of Arts and Crafts. Sir Banister Fletcher on "Greek Architecture (3000-146 B.C.): Origin and Evolution of the Ionic Order. Ionic Temples in Greece and Asia Minor." 6 p.m.

Ecclesiological Society. Major T. Gerard Davidson on "Masonic Sculptures of the Middle Ages." 6, Queen-square, W.C.1. 8 p.m.

Institution of Structural Engineers (Yorkshire Branch). First Annual Dinner. Queen's Hotel, Leeds.

South Wales Institute of Architects: Central (Cardiff) Branch and Institute of Builders. Mr. Anthony Minoprio on "The Small General Hospital." Technical College, Cardiff.

Royal Society of Arts. Mr. John de La Valette on "Social and Economic Aspects of Land Reclamation in Italy." 8.15 p.m.

Thursday, December 1.

Royal Academy of Arts. Distribution of prizes to the students. 8 p.m.

British Coal Utilisation Research Association. Dr. P. O. Rosin on "Aerodynamics of Domestic Fires." Institution of Civil Engineers, Great George-street, S.W.1. 6 p.m.

Institution of Structural Engineers (South Wales and Monmouthshire Branch). Mr. I. Powell on "Construction of the Junction Cut Swing Bridge at Barry Docks." Park-place, Cardiff. 7 p.m.

Friday, December 2.

Faculty of Architects and Surveyors. Annual Dinner. Holborn Restaurant, W.C.2. 7 p.m.

Liverpool School of Architecture Society. Supper, to be followed by a film shown by Mr. Manthei.

Monday, December 5.

Royal Institute of British Architects. Professor W. G. Holford on "The Next Twenty Years." 8 p.m.

Chartered Surveyors' Institution. Mr. D. Edwards on "The Improvement and Development of a Seaside Resort."

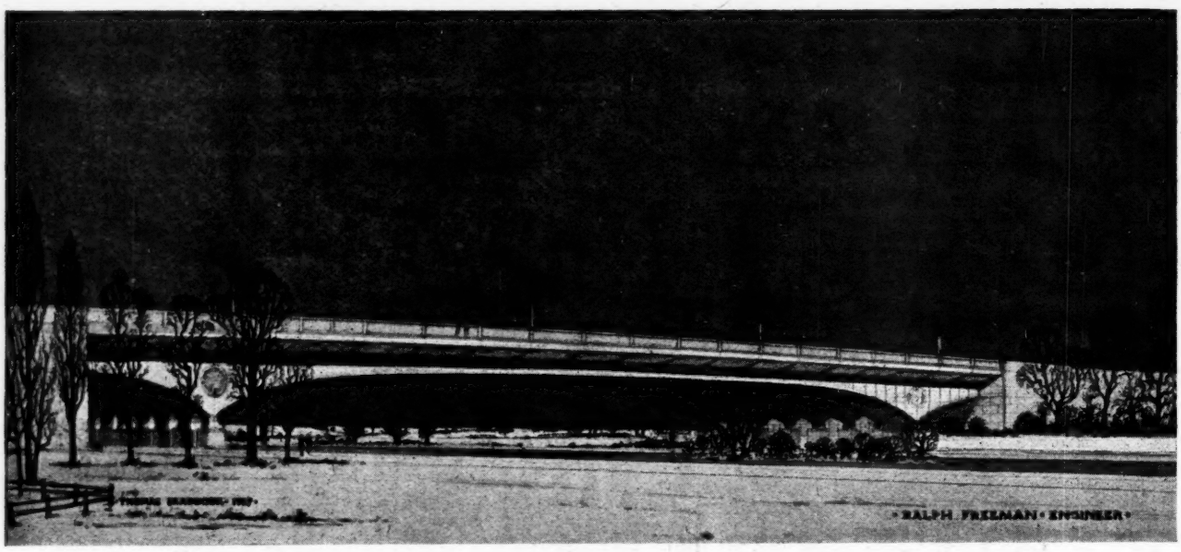
Wednesday, December 7.

L.C.C. Central School of Arts and Crafts. Sir Banister Fletcher on "Greek Architecture (3000-146 B.C.): Origin and Evolution of the Corinthian Order." Examples. 6 p.m.

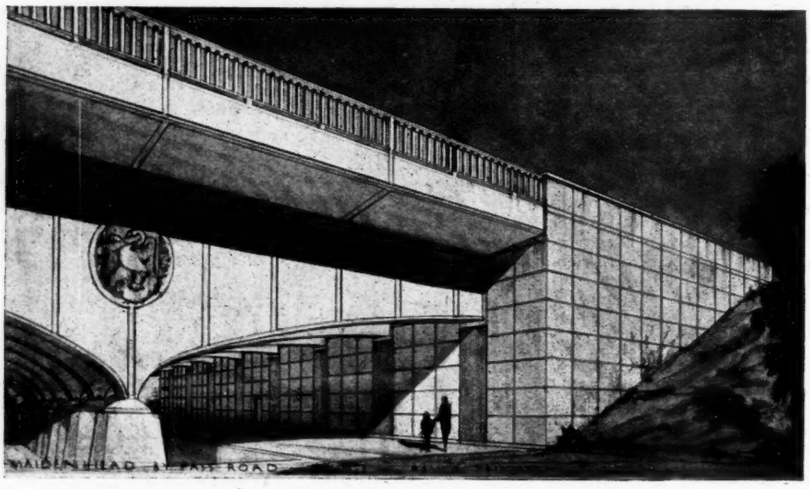
Institution of Structural Engineers (Lancashire and Cheshire Branch). Professor J. Husband on "Modern Motor Roads." College of Technology, Manchester. 7 p.m.

Institution of Heating and Ventilating Engineers. Mr. E. S. Green on "Refrigeration Applied to Air Cooling." Institution of Mechanical Engineers, S.W.1. 7 p.m.

PROPOSED NEW BRIDGE OVER THE THAMES AT BRAY.



A GENERAL VIEW



DETAIL OF PIER AND ABUTMENT.

The Minister of Transport is to proceed with the construction of a new bridge over the River Thames, near Bray Lock. The bridge, for which the contract price is £128,000, will form part of the projected Maidenhead By-Pass. The design, which has been prepared by Mr. Ralph Freeman, of Sir Douglas Fox and Partners (Mr. Thomas Braddock, L.R.I.B.A., Consulting Architect), and approved by the Royal Fine Art Commission, is for a three-span structure, consisting of a single clear span over the river of 270 feet with two side spans of 38 feet. Main steel plate girders will carry a reinforced concrete deck, the superstructure being supported by a heavily piled foundation. The width of the bridge between parapets will be 100 feet, provision being made for dual carriageways, cycle tracks and footpaths. The bridge (which will take about two years to build) is to be erected by Sir William Arrol and Co., Ltd.

TOPICS OF THE DAY

PRIME COST PLUS PERCENTAGE CONTRACTS.

PRIME cost plus percentage contracts appear to be on the increase. They were referred to by Mr. Oliver Roskill in his paper on "Economics of the Building Industry" at the R.I.B.A. on Monday evening, and in view of the interest which his comments aroused, some reconsideration of the nature of these contracts may be of service at a time when there is a marked increase in their use. They are sometimes called by other names, but for the purpose of these notes we give a name to them which the initiated will readily recognise. They are not commonly met with under ordinary circumstances but have, at certain times and for obvious reasons, been made. For instance, in what we are now accustomed to call the "Crisis," this kind of contract was adopted for the sake of expediency and has given rise to a certain amount of criticism.

Such contracts were frequently made use of during, and for a considerable time after, the late war under particular circumstances, *e.g.*, when shortness of time due to sudden emergency often precluded the entering into of some more usual form as, for example, the lump-sum or entire contract.

It may be interesting, therefore, to examine their nature, to discuss the criticisms levelled against them and to suggest some method by which they may be made more acceptable and satisfactory to employers and contractors alike.

A prime cost plus percentage contract differs in its very nature from the most common form, the lump sum or entire contract, for with this latter the contract price, apart of course from any "extras" under the contract, is indicated at the outset, and apart from any terms of the contract as to interim certificates, the lump sum is not payable to the contractor until the work contemplated by the contract is completed. The prime cost plus percentage contract may be briefly defined as a contract in which the contractor agrees to supply, in connection with the subject matter of the contract, all the labour, materials, tools, plant, tackle, etc., on the understanding that he is to be paid, as his profit, an agreed percentage on the total prime cost (including overhead charges), of everything which he supplies.

The criticism directed against such a contract may be summed up under two heads: first, that there does not appear to be included any means by which an employer can exercise control, or place a check, upon the expenditure of the contractor, more particularly in respect to the materials required for the works, other than by the familiar day-time or day-work sheets, if, by the contract, they are made available to him. Secondly, it is suggested that this fact may be a temptation to a contractor to purchase unnecessary materials either through lack of proper instructions or in some haphazard way, the result of which is to increase the sum upon which he is ultimately to base his percentage. It has also been suggested that as this form of contract is one which, under special circumstances such as we are supposing, is frequently entered into between contractors and local authorities, the possibility of such happenings as we have mentioned above is more likely to arise owing to the popularly accepted idea that the expenditure of public money has no limitations.

It is not suggested that the prime cost plus percentage contract is an ideal form but, in certain circumstances, it may be a convenient one. For instance, a great deal of delay may be saved by reason of the fact that a lesser time is taken in its preparation, and, consequently, the works can be put in hand quicker. The work can be set out from a specification and drawings by no means as detailed as those which would be necessary in the case of, say, a lump sum or entire contract, rough quantities often being left to the contractor to prepare when ordering the materials, etc.

Be this as it may be, there can be no doubt that this form of contract may lead to inflated costs, and be to the disadvantage of the employer in certain cases. One would, of course, hesitate to suggest that these are common; hence it may be of interest to consider whether any steps can be taken in order to overcome the criticism above mentioned by placing the employer in such a position that he can exert some control upon the expenditure of the builder and still preserve what we have alluded to as the advantages, in the particular circumstance when this form is used, of such a contract.

It is suggested, then, that generally the contract should contain, as part of it, some term embodying methods of control additional to the mere obligation generally put upon the contractor to supply day-time or day-work sheets. For instance, it might be stipulated that a representative of the employer should actually examine the materials delivered to the order of the contractor at the contractor's place of business or on the site of the work, as the case may be, scrutinising the delivery vouchers in connection with the same, and signing at the same time his approval of the prime cost account.

Such a procedure, especially if it were made part of the contract itself that a representative of the contractor should be present while this checking up and scrutiny was taking place, would go a long way towards producing confidence between the parties without introducing any element of suspicion or distrust. No one would suggest that, where in a formal type of building contract, such as the 1931 R.I.B.A. Form, the fact that the contractor is present while the surveyor is measuring up extras, omissions and variations under the contract, implies any fundamental distrust of the surveyor and his methods. In the case of prime cost plus percentage contracts with a local authority, such an arrangement would undoubtedly give satisfaction both to the parties to the contract and also to the ratepayers whose money is being expended. As is well known, model forms of contract for the use of local authorities have been issued by the Housing Department of the Ministry of Health, as well as model standing orders relating to contracts, but though the tenor of the latter is generally in favour of the lump-sum form of contract, they provide for exceptions in case of emergency. Hence, the form we are discussing can be, and is, used in place of the model forms when circumstances are considered favourable by the committee to which contract-making powers are delegated.

ECONOMICS OF THE BUILDING INDUSTRY

MR. OLIVER ROSKILL, in his paper at the R.I.B.A., to which we have referred in the preceding note, while no doubt somewhat overstating his case, put his finger on some of the admitted problems of the profession and business of designing and erecting buildings.

It will be found that nearly all his criticisms have their roots in the question of cost. The economic problem of building is to establish a price level which, while it ensures a good job and returns a fair profit to all concerned, is sufficiently low to encourage the healthy expansion of enterprise. Here is a problem involving a multitude of considerations and needing for its solution the constructive co-operation of all concerned. That the Ministry of Health is alive to the problem in its aspect of booms and slumps, is shown by its request for five-year capital expenditure programmes from local authorities. The industry must be, and we believe is, prepared as a whole to play its part.

NOTES AND NEWS

"Official A.R.P. and the Architect."

A MEETING of the Junior Members' Committee of the R.I.B.A.—the first informal general meeting of the session—will be held at the R.I.B.A. on Wednesday, December 14, at 6.30 p.m., when there will be a discussion on "Official A.R.P. and the Architect." The discussion will be opened by Professor J. B. S. Haldane, M.A., F.R.S., and Mr. R. T. F. Skinner, A.R.I.B.A. Mr. K. J. Campbell, A.R.I.B.A., will be in the chair. Tea will be served from 5.45 p.m.

Members and students of the R.I.B.A. are reminded that there will be no reporters at the meeting and that speakers are expected to express their opinions as freely and as boldly as they wish.

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R.I.B.A. Social Committee Party.

THE programme of the R.I.B.A. Social Committee party on Monday, December 12, which all members and students are invited to attend, is as follows: 8.30 p.m.-1 a.m., Camera Club Exhibition; 9 p.m.-10 p.m., the Dramatic Society will play "Still Life," by Noel Coward; 10 p.m.-1 a.m., dance in the Henry Florence Hall, arranged by the Dance Club; 9 p.m.-1 a.m., games room.

Application for tickets at 3s. per head should be made to the Secretary, R.I.B.A. Members are reminded that, as accommodation is strictly limited, only two tickets can be issued to each member or student, and are allotted in order of application. The poster and invitation-card for the party were designed by two student members, the former by Mr. Goldhill and the latter by Mr. Delisle Burns.

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Architectural Fees for Non-provided Schools: L.C.C. Proposal.

THE London County Council in 1937 decided that, as a condition of the making of grants under Section 8 of the Education Act, 1936, it will expect conformity in the case of new schools with its own standard planning and, in the case of an enlargement or improvement of an existing school, with as close an approximation to standard planning as is reasonably practicable, and have accordingly approved a schedule of standard accommodation for senior non-provided schools where the managers apply for building grant under the Education Act, 1936. The Council are advised that, in regard to two applications for grant, it was found necessary to replan completely the schools concerned, with a consequential delay in dealing with the managers' applications, and consider that, the question of plans being specialised matter, it would be an advantage if the preliminary sketch plans of the individual new, rebuilt or remodelled non-provided schools were, if so desired by the managers, prepared under the direction of the Council's architect and then passed to the managers' architect to develop for contract purposes. The Council think it reasonable that one-sixth of the architect's fees should, in such cases, be payable to the Council—a proposal with which the Royal Institute of British Architects is in agreement.

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Guildford Cathedral: Recent Progress.

PROGRESS in the work of erection of the Cathedral Church of the Holy Spirit—to give Guildford Cathedral its full title—has reached an interesting stage. The first objective—the foundations for the whole building—was completed in April, no fewer than 778 reinforced concrete piles having been driven into the blue clay. A tunnel runs the whole length of the building to take the service pipes and the electric leads for the organ and broadcasting points. Also finished is the crypt, which includes a choir practice room under the Lady Chapel at the easternmost part of the building.

The south entrance gateway and stairway leading to the south porch have been completed, a view of which is on this page.

The next objective is the building of the Chancel, Transepts, Crossing, Chapel of Chivalry, Children's Chapel, Chapter House, and vestries and offices. This work is expected to take three years, in the absence of interruptions, and a progress view on facing page shows the superstructure beginning to rise at the south porch. Already it is possible to judge of the eventual effect of the union of Clipsham stone with the rose-pink hand-made bricks which form the main building material. This effect should be remarkably successful, for each material adds something to the other. These bricks are being made of clay from the actual site at Stag Hill. The cathedral is, of course, being erected to the designs of Mr. Edward Maufe, A.R.A., Mr. Burnard Geen being the consulting engineer. The clerk of works, to whom our thanks are due for so courteously taking us over the work, is Mr. C. Frankiss. Messrs. Dove Bros. are the builders for the superstructure.

Visitors to Stag Hill should not fail to see the delightful little Pilgrims' Chapel, with its altar furnishings designed by Mr. Maufe, which show how simplicity of line and nice choice of colour can achieve a considerable success.

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L.C.C. Building Contracts: Standard Clauses.

As a result of representations made by the London Master Builders' Association, the London County Council have decided that certain modifications shall be made in the Council's standard form of building contract as regards: (i) the matters to be excluded from the operation of the arbitration clause; (ii) the extent of the contractor's liability for damage and injury to persons and property arising out of the execution of works; and (iii) the question of compensation to the contractor for loss incurred owing to the execution of the work being adversely affected by certain requirements of the Council.

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Preservation of Windmills in Essex.

ESSEX County Council has this week made orders under Section 17 of the Town and Country Planning Act, 1932, directing that, without the consent of the Council, the windmills at Stock, Terling, Aythorpe, Roding, and Great Barfield shall not be demolished.

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School of Planning and Research.

ON Thursday, December 1, and Thursday, December 15, at 8 p.m., a series of two lectures will be given, under the auspices of the School of Planning and Research for National Development, by Mr. H. T. F. Rhodes, on "Environmental Factors and the Incidence of Crime." The lectures, which will take place at 7, Bedford-square, W.C.1, are open to the public.

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Gloucestershire County Council: Vacancy for Architect.

GLOUCESTERSHIRE COUNTY COUNCIL invite applications for the appointment of a County Architect, who will be required to devote his whole time to the duties of the appointment. The salary offered is £800 per annum, rising by annual increments of £50 to a maximum of £1,000 per annum, with travelling and subsistence allowances. Forms of application may be obtained from Mr. Richard L. Moon, Clerk of the County Council, Shire Hall, Gloucester.

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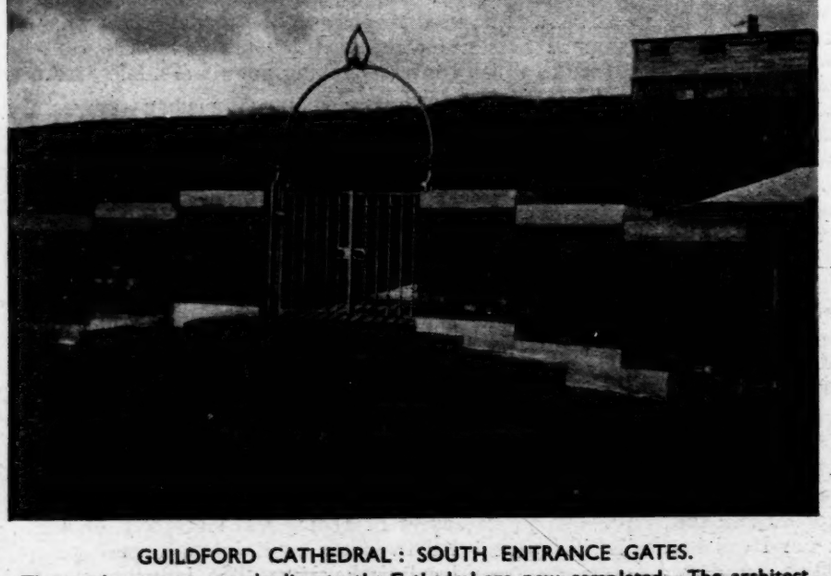
Additions to the "Green Belt."

THE London County Council is to make contributions, amounting to nearly £100,000, towards the cost of acquiring or preserving approximately a further 2,450 acres for addition to the green belt. The



GUILDFORD CATHEDRAL: SOUTH ENTRANCE GATES.

The south entrance gates leading to the Cathedral are now completed. The architect is Mr. Edward B. Maufe, A.R.A.

"NIGHT THRUSTING DAY ASIDE."
Sculpture on the Adelphi. Mr. Donald Gilbert, Sculptor.

principal areas concerned are 68½ acres of land at Boreham Wood, Herts, and 14 acres adjoining Aldenham Reservoir; 905 acres of land forming part of the High Elms Estate, Farnborough, Kent; 499 acres adjoining Enfield Chase, Middlesex, and 95 acres of agricultural land in Potters Bar district; and 480 acres forming part of the Shabden estate, Chipstead, Surrey.

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The "Blue Circle" Players' Production.

We are informed that in view of the demand for seats for the "Blue Circle" Players' production of "Call It a Day," at the Cambridge Theatre, referred to in our last issue, it has been found necessary to arrange for another performance, which will be on the evening of Tuesday, December 6. The performance will now, therefore, be given on five nights—Tuesday, the 6th to Saturday, the 10th of December, inclusive. Tickets—proceeds from which will be divided between the Builders' Clerks' Benevolent Institution and the I.C.W.A. Benevolent Fund—may be obtained from the Business Manager, Mr. Leonard Smith, at Portland House, Tothill-street, S.W.1 (Whitehall 2323).

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A Town Planning Scheme for Durham.

A planning scheme embracing an area of approximately 38,000 acres and including parts of the districts of nine local authorities in County Durham, has received the approval of the Minister of Health. The scheme was prepared by the Central North Durham Joint Town Planning Committee and the districts concerned, either wholly or in part, comprise the County Borough of Gateshead, the Urban Districts of Chester-le-Street, Felling, Houghton-le-Spring, Stanley, Washington and Whickham and the rural districts of Chester-le-Street and Durham. The Councils of these districts, together with the Durham County Council for certain specific purposes, are the responsible authorities under the scheme.

The scheme provides among other things for industrial development in areas suitably situated for the purpose and for residential development at densities varying from 6 to 16 dwelling houses to the acre. In a considerable area which is not yet ripe for development, general development is deferred pending the issue of General Development Orders in accordance with the provisions of the Town and Country Planning Act, 1932.

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Progress of Housing in Greater London.

The Housing and Public Health Committee of the London County Council report that 771,759 houses and flats were built in the Greater London area between 1919 and the end of March, 1938. Of these, the London County Council had provided 76,877, other local authorities 76,311, and private enterprise 618,571 (houses of all classes).

The number of dwellings erected by local authorities in 1937 was slightly more than in 1936, and by private enterprise nearly 10,000 less.

The houses built by private enterprise in Outer London in 1937 were mainly erected for sale, but there appears to be a tendency for a greater proportion to be let. Of the 10,379 dwellings built by private enterprise in the County of London, 6,349 (6,963 in 1936) were flats built for letting at rents beyond the means of working-class families. In the last few years there has been a rapid increase in the provision of such flats by private enterprise, and in 1937 the largest number provided in any Metropolitan Borough was 977 in Wandsworth.

COMPETITION NEWS

St. George's Hospital.

The closing date for the submission of designs for the reconstruction of St. George's Hospital has now been fixed for January 14 next. Competitors are requested not to send in designs before December 15.

CORRESPONDENCE

Intercepting Traps.

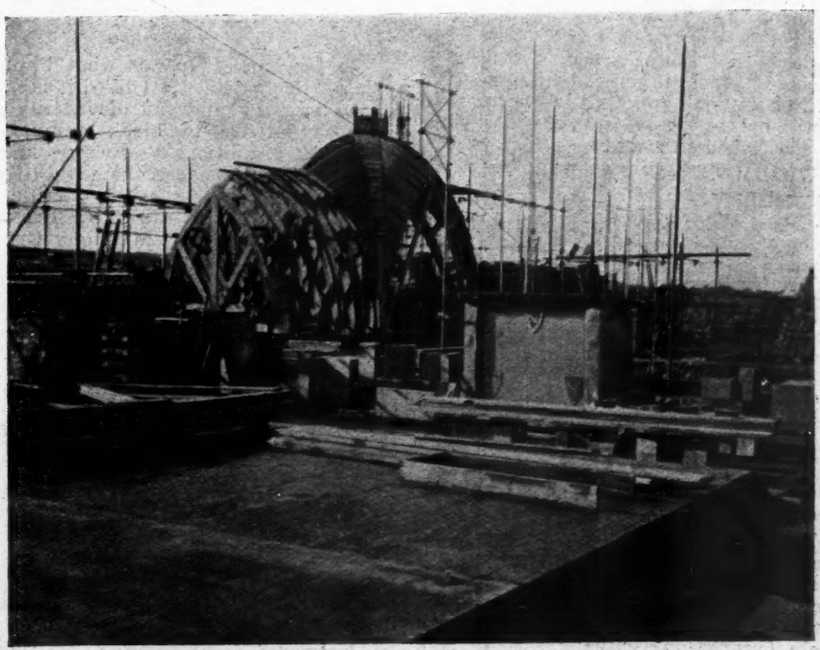
To the Editor of *The Builder*.

Sir,—Almost from time immemorial there has existed a belief in certain minds that of all the deadly emanations there is none to compare with sewer gas, whatever that may be. Actually, however, there is no evidence whatever of health injury from its inhalation. Conceivably if the emanation from a sewer or a drain, as from anything else for that matter, has a strong and objectionable odour, an occasional individual may be upset and sickened; but in these days it may be taken that the generally accepted view, in medical circles at any rate, is that in order to produce disease, typhoid fever for example, there must be taken into the body, more particularly in a case involving emanation, some living organism. So far as other symptoms are concerned, what may occur depends entirely on the composition of the emanation. If, for example, it is rich in carbon monoxide and exposure is continuous over a period, there may occur a certain amount of blood damage, and so with other gases which would produce symptoms and conditions characteristic of the gas concerned.

As regards the part that may be played by the intercepting trap as a preventive of injury to health, or even disease production provided there was escape of specific organisms, it must be obvious that if it is omitted, all that is necessary is to see that the next barrier is efficient and that the construction of the drainage system as a whole is sound, and any other traps within or without the building adequate.

My own view with regard to drainage systems in this country is that they are altogether too complicated. Without exposing anybody to any danger to health or risk of disease, many of the pipes which disfigure our buildings could be quite easily and safely omitted, and a marked degree of simplification introduced.

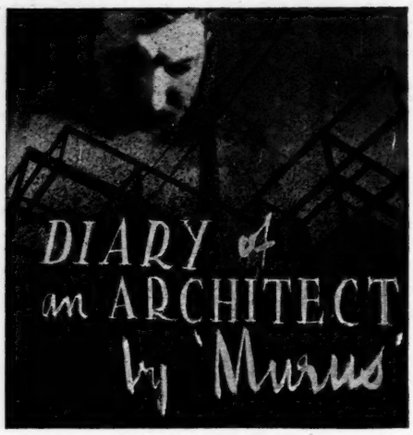
Charles Porter [M.D., B.Sc.].
Medical Officer of Health,
St. Marylebone, W.1.



GUILDFORD CATHEDRAL: A PROGRESS VIEW.

A progress view of Guildford Cathedral, taken from the north-east, looking across the floor of the Lady Chapel towards the centring for vaulting over the eastern part of the south ambulatory. In the foreground is the foundation stone. Some notes on the progress of Mr. Edward Maufe's structure are given on facing page.

WHICH ROAD TO ARCHITECTURE?



November 18.—"Reading maketh a full man; conference a ready man; and writing an exact man."

So said Lord Bacon, who never had the misfortune to record the activities of a twentieth century. He was right—but, were I ever to come into contact with him, I should want to know the degree of exactitude that is possible in writing of the displays which one is called upon to witness and comment on.

Around me I find so many states of reality. Creative people see reality in so many different ways, and it puzzles me when I think of the perfect creation.

If there is such a thing as perfection it seems to me that it should be universally applied by the creators and universally understood by the spectators years and years later. And then, perhaps, it is possible that each of us possesses (quite rightly) a different sense of reality, and that our emotional structures are, correctly, of different patterns; that our mental approach to any creation *must*, of necessity, be of widely different origin.

I loathe the term "happy medium," and yet I cannot see an architecture divorced from any practical methods of building—nor can I see an architecture without the foundation of tremendous spiritual impetus. MAXWELL FRY is an architect of intellect; his work is a fusion of function and intelligent use of structure and materials. LE CORBUSIER is pictorial; he sees architecture in terms of a picture. WALTER GROPIUS is a sociologist; he thinks of the standards of life and humanities. RUDOLF STEINER is a creature of the spirit, and the display of his work at the 20th-Century Theatre has a depth rare in the ranks of practical, efficient, intelligent and successful architects. His integrity is beyond question; therefore his achievements — more correctly, achievement, since the Goetheanum appears to be his only architectural work—cannot be dismissed.

To analyse the work would be stupid. It is on a plane where words do not exist to describe it—at least, they would not be my words, and the only suggestion I can make is the perusal of a book written by Steiner,* which, if you cannot agree with, will at least jolt you (and jolt is the right word) out of the more practical sayings of the orthodox writer.

WILLIAM BLAKE, the painter, is the nearest approach to Steiner that I know of. This simile may serve as a clue.

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Events of the week have included an Exhibition of Students' Work at the Reimann School, the London Group show, ANDREW GRANDIS'S one-man show, the private view of the portrait painters and the Film Ball.

The work of the Reimann School was of a very definite interest. In most schools the result of the students' work appears general, full of vague possibilities, and the jumping-off point to a number of careers.

The Reimann establishment has taken the definite branches of Display, Commercial Art, Fashion and Photography, and fused into these subjects the well-defined principles of contemporary work which were founded in Germany. There is a strong Germanic sound to the staff names, but the result more than justifies this use of foreign teachers.

The fundamental principles of the various departments have been firmly grasped, the technique is of an extremely high order, and the purpose is very much in line with twentieth-century requirements. The window displays are actually built; and outstanding was the large-scale effort for Elizabeth Arden and the model for the G.P.O.

An interesting exhibit was the method of teaching composition to photographic students, who are notorious for their avoidance of attempting anything with the pencil. Instead, they have been encouraged to fill spaces with objects in a similar manner to the surrealists. In fact, they qualify well for that group as exhibitors.

Interior Decoration is a new department which becomes a part of the School in January next. SERGE CHERMAYEFF, WELLS COATES, HOWARD ROBERTSON and GORDON RUSSELL are to be visiting lecturers, and DUNCAN MILLER is to be principal. Since the subject is so little understood, and since architects do not seem to be very enthusiastic at the idea of taking the problem of curtains and carpets seriously, it is obviously a good thing. I do wish, however, that they would approach JOHN HOLMES on colour in interior decoration.

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The London Group was what I would call a "lively" show. I liked it because it displayed a high degree of sincerity and a strong desire to break away from academic traditions. Every known medium of expression is there and (if you will forgive my going on like a critic for a moment) one painting by BERNARD MENINSKY (63), one by MARGARET GEDDES (71a), another by RODRIGO MOYNIHAN (14), a fifth by NAN YOUNGMAN (99), a winter scene by NANCY HIGGINS (142), and a water-colour by VIVIAN PITCHFORTH (216) are marked in my catalogue as being outstanding. The show as a whole makes me a little nervous as to the wisdom of so many expressions existing in painting, but my conclusion after seeing the London Group is simply this:

So many expressions (Cubism, Impressionism, Surrealism, Romanticism, etc.) are fundamentally bad. They show a disturbed social state. The fault lies in the world generally, not in the artists in particular. If this state of change and experiment is necessary (and it most probably is), then I am glad that the Arts reflect it truthfully. Architecture reflects just the same confusion, and I resign myself to a new civilisation passing through the pangs of childbirth.

That it is vast and historic I do not think there can be much doubt; that people will not view it with an open mind there is equally very little question.

The products of the new are extremely personal and difficult to understand readily, but one minute aspect of the whole strikes me with a painting by JOHN TUNNARD, which is part of the London Group show.

At first glance, it is one of those paintings one looks at in amazement, but which one never looks *into*. Just an abstract painting. In the catalogue it is mistakenly described as Epsilon (138), but it is really called Psi, the sign of which is Ψ. I wanted to ask Tunnard about it, but he had left for his native Cornwall, so I attempt some explanation myself.

Psi is the 23rd letter of the Greek alphabet—it is the equivalent of the English ps—that is what the Information Bureau of Selfridge's tell me.

Throughout this painting you will see this use of the sign Ψ with almost a dominant use at the bottom right-hand corner. Take the spearhead shape and trace its lines through various directions, and they eventually return to this dominant. It sounds, I know, like a form of pictorial geometry, but the balance of shapes, the arrangement, the tones, technique and counterpoint create in this rectangle a world of interest so far removed from the more mundane subject matter of, say, a winter scene, by a nineteenth-century painter. Go and look at this design carefully, and dismiss your prejudices for a moment, because I am convinced that it belongs to the future. If you see nothing in it you are probably insensitive, for the very play of shapes and lines is a delight.

The architectural painter, HANS FEIBUSCH, has some interesting work there, more decorations than paintings.

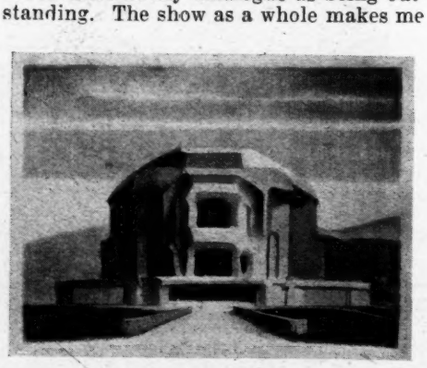
* * *

ANDREW GRANDIS is young, possessed of good ideas, of definite promise. Obviously he is capable, but, like so many painters, he ought to stop work and live a very full life for a short time. A good painter can never be a cautious man, though there are exceptions that appear to prove the rule.

* * *

I had tea with JACOB EPSTEIN and his wife—and four dark-skinned models. EILEEN ASCROFT, the *Daily Mirror* writer, I took to the Film Ball; and I learnt, by spending one dreary night in the "Stars" box, that they rightly belong to the screen, and should adopt *noms-de-plume* off, or *vice versa*.

Murus



RUDOLF STEINER'S "GOETHEANUM."

(See this page)

* "Ways to a New Style in Architecture," by Rudolf Steiner. Anthroposophical Publishing Co. 6s.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

ECONOMICS OF THE BUILDING INDUSTRY.

A PAPER on "Economics of the Building Industry: Achievements and Anomalies" was read by Mr. Oliver W. Roskill at the R.I.B.A. on Monday. Mr. H. S. Goodhart-Rendel (President) was in the chair.

The relationship between the three principal partners in the building industry (said Mr. Roskill) has changed fundamentally in recent years. I refer to the building materials manufacturers who make the raw materials, the architect who designs and plans the finished product and the builder and contractor who conducts the assembly. I have deliberately put in a secondary position the building owner who provides the finance or pays the bill, and his accountant watchdog—the quantity surveyor. Finance should always be the hand-maid of industry and not, as it so often tends to be, its mistress. While the property company which is going to own and manage a block of flats or a private individual who is going to live in the house he is having built may naturally feel that they are entitled to a voice in what it is going to look like or how it is going to be planned, they should not do more than lay down general specifications in the initial stages. Interference in detail seldom proves to be in their interest.

The relationship between these partners—never a close one between them all—is changing because the basis of the building industry itself is changing from craft to applied science. It is a change which has taken place in most other industries—in fact, building has lagged behind in this respect—but it is proving more difficult in the case of building because of the existence of five partners, all very independently minded, and because of the very large range of materials employed.

The Architect.

Take the architect. He is in an impossible position. I do not believe it is humanly possible for any individual to be responsible for design and æsthetics, which implies a deep sensitivity to environment and historic influences; for planning which implies a full knowledge of contemporary social customs and requirements, and in addition something of the background of motion study; for materials, which implies an absolutely vast knowledge of a score of different industries and a thousand different products, ranging from asbestos to zinc; for engineering methods in fields as diverse as steel-frame construction, air-conditioning, and electrical wiring, and at the same time to be his own salesman and talk intelligently at dinner parties or shoot partridges with property owners. There are several minor points which I have left out, such as developing sufficient strength of character to cope with recalcitrant builders. I have a very real respect for the architectural profession, in which I have—and hope to retain—many friends; but I repeat, I do not think it can be done.

That many architects agree with this is implicit in several recent developments in the profession. It is, I fear, all too common for architects to get prospective sub-contractors to prepare for them various parts of the technical detail of their designs. An even more undesirable habit—which is at any rate sufficiently common for specialist sub-contractors to have to take steps to prevent it—is for the architect to erase the name from the bottom of the drawings and get half a dozen firms to tender on their competitor's drawings. Architects would do well to bear this in mind when criticising some of the price rings which have recently become a commoner feature of the industry. Another result is that the sub-contractor who prepares the drawings is naturally going to see to it that the amount of his particular product or material isn't stinted. In some cases architects with complementary qualifications form a group in partnership together, but this, I believe, has been comparatively rare, though I should have thought it one of the best ways of meeting the difficulty. . . . Cases in which the architect employs a specialist consultant—say, in electrical wiring—are still comparatively rare, and I suggest that the fault lies mainly with the method of payment laid down by this Institute. Secondary causes are that while the nominal work of the architect has been enormously widened, it is very difficult for him to persuade the client of the need for additional expenditure on specialists; and in some cases he is unable to sacrifice part of his percentage on those sections of the work on which specialists are employed. One point on which there seems to be very little independent information, and which might well be the subject of investigation by a body such as the Surveyors' Institution, is whether the specialist can generally save his client the equivalent of his fee even under the existing system of payment. Many specialists claim strongly that they do so.

In any case, as long as the tenders of six specialist sub-contractors have to cover the cost of six sets of drawings which should really have been prepared by the architect or a specialist consultant, it is obvious that the fee which should be paid to the latter is hidden in the extra amount of the tender.

I cannot leave the question of the ability of the architect to cover the whole range of knowledge of materials and methods without a passing reference to architectural education. Ideally, knowledge of design, construction and materials should go together and it is impossible for the architect to separate the technical from the æsthetic. My question is not whether the architect is to remain responsible for the whole field—he must remain the co-ordinator—but whether he can do so without assistance, whether the mechanism to enable him to use such assistance is satisfactory and whether he is in close enough contact with his other partners in the building industry. Some schools of architecture are very much concerned with design in relation to current sociology and ideology; others with materials. I do not know who has been most to blame for the divorce of design from materials and construction. But while many modernists will tell you that they are developing the applications of a new material, such as reinforced concrete, in fact they are much more preoccupied with sociology and ideology than with a study of new materials, and there is a danger of our architectural education propagating a formalised idea of what a modern house should look like.

There is one other related question on which I want to touch in connection with the position of the architect. Is he going to maintain much longer an independent professional status? Government departments, local authorities, property companies, the railways, chain stores and institutional building owners generally are accounting for a constantly increasing proportion of the total building activity of the country and all employ salaried architects. . . . At the same time, the salaries generally offered are comparatively low, which results in failure to attract the best men. I feel that this general trend is probably inevitable, but it is disquieting mainly in so far as an independent position is important from the point of view of design and æsthetics. There are a certain number of architectural practices which are mainly of a consultant type, and these may perhaps point the way to a solution of this particular problem.

The Builder and Contractor.

What is the position of the builder and contractor? To take a simile from engineering, if the architect designs the machine and the building materials industry supplies the raw materials and constituent parts, the builder is responsible for assembly. But it is assembly under conditions very different from those in an engineering shop. First there is the weather and all that that means. Secondly, the designer and the assembly engineer are on different sides of the fence and there is little co-operation between them on method. If the designer of a motor-car, as may well happen, designs his mudguards so that pressed steel dies are awkward or expensive to make, the press department will quickly let him know the fact and modifications will follow. If a new and cheaper method is devised for, say, shuttering concrete which requires modifications in design, the builder may know about it, the architect may not. To get it actually used is a matter of great difficulty. The builder is generally at his best on method when he is doing speculative work organised and planned by himself. Please don't mistake me: the houses may be the last word in ugliness, and may have no foundations and a leaky roof; but to see method at its best you have to go and watch the orderly development by one of the better builders of a speculative estate.

Form of Contract.

The form of contract is a fruitful source of trouble and one to which a great deal of thought is being devoted at the present time. I think there are two tendencies: one is towards combination by contractors to try to eliminate some of the more glaring anomalies of the competitive tendering system; the other towards an extension and adoption by other contractors of what is generally known as the Bovis system.

With regard to the former, building remains an open industry. It is practically impossible to start a new daily newspaper nowadays; it would be very difficult to start the manufacture of motor-cars on a large scale or of certain chemicals; but every day a few employees of building firms break away and set up as jobbing builders or speculate a house or two and then try their hand at contracting by putting in a low price for some job which is going. A high proportion go bankrupt often before the job is finished, and it is undoubtedly in the interest of the building industry as a whole to stop this wastage while at the same time retaining freedom of entry to the industry. A further difficulty of the same kind arises from speculators who enter the industry with little knowledge of it and even less care for standards and service. It is fashionable at the present to talk of senseless price cutting. On the whole, I am strongly in favour of senseless price cutting, provided: (a) that the consumer gets his goods cheaper without loss of quality and (b) that it does not react against the efficiency of organisation and technical progress of the industry as a whole. In the case of building, the consumer may think he is getting his goods cheaper, but he may not get them at all if the contractor goes bankrupt in the middle. I don't say that this is very widespread, but it is sufficiently common to merit consideration. And in any case if the contractor has to put in too low a tender there is an enormous temptation for him to scamp the job, which the combined efforts of the architect and quantity surveyor may fail to prevent. I cannot over-emphasise my conviction that unless the relations of the several partners in the building industry are directed towards co-operation in producing the best possible job at the lowest possible price commensurate with a reasonable return to all of them, rather than having the relations of smugglers with Customs officers, progress is going to be very difficult.

Is the stimulus of intense competition the right stimulus for effecting technical progress in the building industry, particularly in the field of building methods? Many new methods demand investment in new plant and require practical research and development work. If provision is made for eliminating excessive price cutting, can it be linked with a drive for technical progress?

These are questions which I should hesitate to answer. I do not propose to deal in detail with the London Builders' Conference, which is the latest of the builders' price control schemes. It has been described recently in great detail by Sir Alfred Hurst in *The Builder*, and I do at any rate herald it as a great advance that its objects and methods should be subjected to the full light of public scrutiny in the industry. It is worth adding that there have been many other local price rings of contractors, though most of them on a rather different basis.

Apart from the chequered history of the fundamentally different "cost-plus" system, I believe the origin of the Bovis system lay with the requirements of a building owner carrying out a succession of similar jobs, in which the need for experience in the particular type of work concerned pointed strongly in the direction of choosing one builder and sticking to him. It is possible that if each job were put out to tender there would be an appreciable saving on the price paid for, say, 100 jobs. But, the argument runs, this apparent cash saving would be more than counterbalanced by lack of speed and continuity, by dislocation in dealing with many different builders, and by loss of the advantage of bulk purchase of standard materials. I think the argument is justified provided always that the check provided by the independent quantity surveyor is faithfully adhered to.

A great many of the troubles associated with the traditional open tender system could be eliminated if the architect took the proverb "more haste, less speed" nearer his heart. Even with the most expensive sites there is little doubt that speed is allowed to assume a disproportionate importance. The building owner wishes to see some practical signs of activity, and the architect is too inclined to be frightened of standing up to him. I feel sure that in many cases it would be possible to convince the building owner that it is possible to make substantial savings by planning the job thoroughly right from the start and avoiding extras and disorganisation later. Interest on the value of the site is not the only factor. The building owner wants to let his flats, trade in his shop or start production in his factory as quickly as possible. But I think it should be possible to achieve at least the same speed of building as well as to reduce the cost if instead of the architect producing rough plans which are then used as a basis for tendering he were to produce half-inch detailed drawings right at the beginning on which proper bills of quantities could be prepared. In the same way, vague p.c. items should be kept to a minimum. Here again, just as in the case of the employment of specialists, I think it is partly a question of method of remuneration as laid down in the profession. The architect gets out rough plans because he often does not know definitely if the job will be proceeded with or if he will get it.

The Part of Labour.

I have not said very much specifically about labour because I am treating capital and labour as partners in the building and contracting section of the industry. On the whole, labour relations in the industry have fortunately been very good. This can be attributed partly to the excellent conciliation machinery, second to none except perhaps the engineering industry; partly to the carefully thought-out grading and zoning arrangements and partly to the fortuitous circumstance that building has to meet no export competition. But I do feel that organised labour, without prejudice to its long-term interests, could play a much more active part in promoting the improvement in building methods and the reduction of building costs. There are many parts of the country which would benefit greatly by the greater use of building blocks of one kind or another. But is it a mason's job or a bricklayer's? Labour difficulties, actual or possible, have had a substantial influence on the introduction of new materials. The same applies to methods. Experts in labour organisation are not always welcomed with open arms in engineering shops. The sight of a stop watch on a building job will almost certainly mean a strike. I am not suggesting that there is not much to be said from the labour point of view; but I would like to see some initiative on the matter of improved method come from labour. It would be a big feather in the cap of the unions if they would undertake a practical study of the possibilities.

The Building Materials Manufacturer.

If building itself remains somewhat behind other industries in technique and organisation, not so the building materials industries. It is worth remarking that the change from craft to scientific technique has in many cases had a not very happy effect on the æsthetic side of the building materials industries and sometimes also on the durability of building materials. If the architect does not know all he might about materials, the materials manufacturer is generally out of touch with the taste of the architect. I know that the more far-sighted of them have recently come to recognise this. You have your rustic Flettons, but for a nice, rather overburnt purple you may have to go to a small yard in Hampshire, where you will find tradition, but not technical efficiency.

The prices of most building materials are very closely controlled. . . . While I haven't a childlike confidence in the disinterestedness of the British industrialist, and while I could mention several rings which I should like to see broken, I am not one of those who believes—perhaps because I work for quite a number of them—that every trade association is a Gomorrah and every fixed price a step towards economic damnation. The London Brick Company reduced the price of Flettons at a time when they were arriving almost hot on the site. There is developing a certain vogue in policies of reducing prices to stimulate consumption, and this at least appears to have proved one of the cases in which the much-abused economist is right. But can we rely on the vogue spreading? Is it enough? While I believe that the large-scale organisation of industry is bringing a sense of responsibility and public service to which even the interest of shareholders is sometimes taking second place, I am doubtful. I think the materials manufacturers have had things too much their own way on the matter of price. I am not blaming them. I think they are more efficient than the building and contracting section of the industry. Unless they combine together for a definite price policy they have little guarantee that any reduction they make in price—particularly in the case of the less important buildings materials—will ever get through to the consumer and thus affect their turnover. But couldn't they combine to evolve such a policy in conjunction with the building and contracting section of the industry? Here would be a line of thought worthy of the name Building Industries National Council. The motor manufacturers are complaining that steel is too costly. They have found how elastic is the market for cars, and, whatever the merits of the case, they are big enough consumers to make their voice felt. I am convinced that the market for building—not only houses—is even more sensitive to price.

There are, too, other aspects of the building materials section on which I should like to touch. It is much too difficult to introduce a new building material. I am quite aware of the arguments against rushing into the use of untried materials in building which has got to stand the test of years. But much modern building is not standing the test of years in any case—you have only to walk round a five-year-old speculative estate to see that—so that a slightly more experimental spirit might be justified. Speculative builders are rather ovine in the matter—if one can be persuaded to try a new material, the others will follow if it proves cheaper. But as far as the architect is concerned, even the most intelligent traveller selling a new product of genuine interest finds it a matter of extraordinary difficulty to get inside a busy office, and I do not think the firm developing new products should have to face such a terrific inertia, or what the Americans call sales resistance. It is not a question of the product being untested; even with a B.R.S. test behind him the manufacturer is faced with an uphill fight. I am not at the moment trying to suggest a remedy—I merely draw your attention to what I believe to be a serious trouble, the roots of which are probably very deep.

This leads me to my second point—that in certain sections of the building materials industry there is room for improvement in selling methods. I hesitate to mention any individual section, but I think the remark may be directed more to those products whose sale is determined by builders themselves rather than by architects.

The Building Owner in Relation to the Industry.

What is the position of the building owner in relation to the industry as a whole?

At the present time, the trend is for an increasing proportion of the total output of the building and contracting industry to be carried out on behalf of public bodies. Official policy has been to aim at taking up the slack caused by the decline in private enterprise speculative housing by pushing forward energetically with the local authorities' work on slum clearance and the abatement of overcrowding. Though much remains to be done and though the programme itself may be greatly expanded if standards of overcrowding are tightened up, this work has met with a good deal of success. On top of it has come very heavy building expenditure under the rearmament programme on Army, Navy and Air Force establishments; the prospect of intensified work on A.R.P., and above all a fairly clear indication that the Government is at least considering a policy to which the name "slump control" has become attached—that is to say an increase in public works expenditure when the curve of the trade cycle is on the downward grade. A first essential to such a policy is to plan in advance and in some detail actual projects on which work could be started at the appropriate time. The request by the Ministry of Health for five-year capital expenditure programmes from local authorities shows that this essential has been considered even though the work itself may, owing to the pressure of rearmament, be postponed for some time.

In the past there have been big fluctuations at different times in the proportion of the total building output accounted for by public bodies. These fluctuations have been largely due to variations in Government policy as regards housing, as shown by the various post-War Housing Acts. What has happened before may happen again, but on the whole—and taking into account broad social and economic factors such as the effect of taxation on the trend of income levels—I feel that private enterprise building is likely to account for a decreasing proportion of the output of the industry. If this is correct, I think the future trend in the sphere of organisation is reasonably clear, because an industry whose main market is in the hands of the State is likely to have to submit to a good deal of State control.

My suggestion is that the industry would be wise to meet this halfway: rather than building Noah's Arks regardless of cost on the assumption of "after us the deluge," that all sections of the industry should co-operate in improving costs and organisation from raw material to finished product. . . . As to a positive and constructive attitude, I think it is possible that the Royal Commission on the Geographical Distribution of the Population which is now sitting will recognise that there are certain towns which grew up on the basis of local raw materials which no longer exist, and which cannot hope to regenerate themselves by attracting new industries because they do not offer a location suitable for new industries. The annual sum paid by the Central Government for relief of unemployment in such towns may reach a figure of the same order as the total rateable value of the town, or even more. There is

only one logical course in such cases, and an examination of the costs and savings involved suggests that it would be an economic course within a very short space of time, and that is, to move the whole town to a suitable location. Here is a gigantic task for the building industry and one that could only properly be tackled by co-operation from raw material to finished product. There is rather a tendency for industry nowadays to expect the Government to take the initiative in everything. If the industry had a central body capable of anticipating demands and planning policy ahead on a scale such as this, it would greatly weaken the case for any interference in it from outside.

Scotland is, of course, very behind-hand in tackling the housing problem on an appropriate scale, though many special difficulties are involved up there. Nevertheless, the attitude of the State is illustrated by the terms of the Departmental Committee appointed in September "to inquire and report as to the reasons for the increase in the cost of building working-class houses in Scotland." That is the kind of inquiry which it should not be necessary for the State to appoint, particularly as I suspect that some of the reasons will blush when they see the light of day. At the present time the only action which the State can take regarding building costs is one which leads straight to stalemate. How many times in boom years and even for some time after a boom does one see that "in expectation of a drop in prices of building materials, the Ministry of Health has refused sanction for the new council housing estate at Puddleton"? It is not easy for the building industry as a whole to learn the lesson that big turnover is more important than high prices; because it is not the prices of one but of a hundred different companies which affect the result.

The primary point which, as you will see, runs through my whole argument is that from the point of view of the building owner, whether local authority undertaking housing, or industrial concern undertaking a new factory or extension, the main factor is the cost factor. Design is important, but cannot be separated from the cost.

Research and Information.

Finally, there are a few general points on which I should like to touch. Research is a subject on which everyone has views, and I'm afraid I am no exception. In particular, I wish to plead for an extension of economic research. . . . The Building Industries National Council has gone some way towards meeting the demand for statistical and economic data by collecting all available published information. But a full programme of economic research implies something much more than this—the collection of new information. An outline of the work which has been done and needs to be done was given in Chapter VII of the P.E.P. Report on Housing, and although that was published nearly four years ago, I regret to say that its substance still holds good.

As regards technical research there is an urgent need for a better mechanism for getting the result of such research used in the industry. The work of the Building Research Station still accounts for a very high proportion of the total technical research work done in the industry. . . . The excellent work done is, however, perhaps necessarily published in a form which combines the erudition of a paper to the journal of a learned society with the guardedness of a Blue Book, and provision for "putting across" the results of research is an important need in the industry.

I have said nothing in all this about the town planner, not from any lack of respect, but because I feel that it is partly a coincidence that town planning should have been linked with architecture, and that it is likely in the future to develop into an entirely separate profession, and to have its main affinities with land planning and utilisation as a whole. It will organise green belts and national parks and play a big part in the siting of industry. If the trend among architects is towards salaried employment, I can only feel that this is even more likely to be the case with town planners, as their place is in the counsels of local authorities. I hope their salaries will be high enough to attract men of the calibre that the job deserves. I suppose it will be for the next generation to clear up our mess in land planning just as we are coping with the clearance of the back-to-back hovels of early Victorian industrialisation. There can surely be no better example of shutting the stable door too late—and then only half-heartedly—than the Ribbon Development Act.

I should like to make a reference to the quality of building, because here, too, action has come too late. The National House-builders' Registration Council has objects with which I do not think anyone could disagree, but meanwhile we have had Mrs. Borders in the box [Mr. Roskill is referring to the case, Bradford Third Equitable Building Society *v.* Borders, now before the Courts.—ED.] and committees of enraged houseowners on speculative estates all round the country who speak with feeling and some warmth of the building industry. In such cases other industries have found that there is no separation of the sheep from the goats. If the good can't control the bad they will be tainted by them. This is a problem for the future.

Discussion.

SIR JONAH WALKER-SMITH, M.P., who proposed a vote of thanks, described the paper as being informative, critical and provocative, and went on to say that one aspect to which the author had directed their attention with some sort of recommendation was the "cost plus" system. One would have thought that he regarded that as something new, but from the speaker's experience it was very far from that.

DR. BRINLEY THOMAS said that recent figures showed that the production of houses was an important item in our national investment total; he agreed with what Mr. Roskill had said with regard to the increasing part that the State must play in regulating the volume of investment, and the speaker would have liked him to be more explicit on that question.

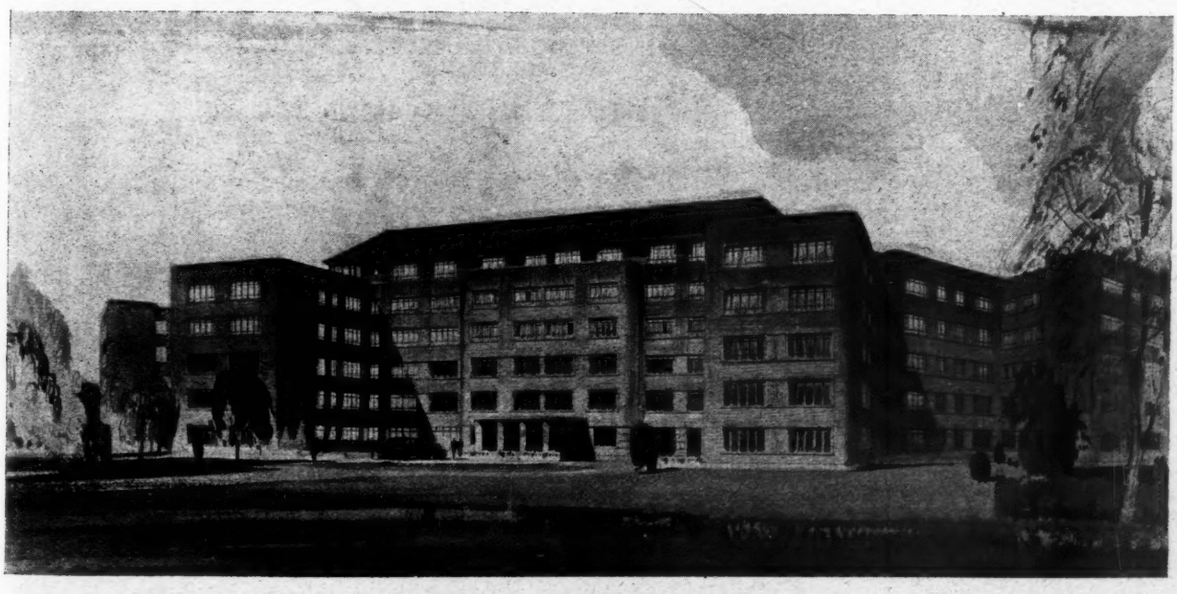
MR. R. COPPOCK said he was against competitive tendering so far as he knew it, for he considered it to be responsible for many of the difficulties they were facing in order to improve the condition of the operatives.

MR. GEORGE HICKS, M.P., said that whilst it was true that they were an old-fashioned industry, it was also true that tremendous progress was being made. Every effort was being made by the Building Industries National Council to keep abreast of current matters affecting the industry, and particularly was that so in the case of A.R.P.

Others who took part in the discussion were Messrs. T. A. DARCY BRADDELL, F.R.I.B.A., M. NICHOLSON and E. BARR.

Replying, Mr. ROSKILL said he hated the "cost plus" system, but he would like to make it clear that there was a trend to use it which was becoming more and more common, and it was a system to be reckoned with. With regard to the Building Industries National Council, what he had tried to say was that there they had a unique organisation in the industry which could act as a co-ordinating body; he did not say that it was not fulfilling its policy, but that it could be carried further.

Again, he did not wish to get rid of the independent architect, but he believed that the trend was that the independent architect was beginning to disappear and that he was likely to be replaced by the salaried architect or by the consultative type of architect.

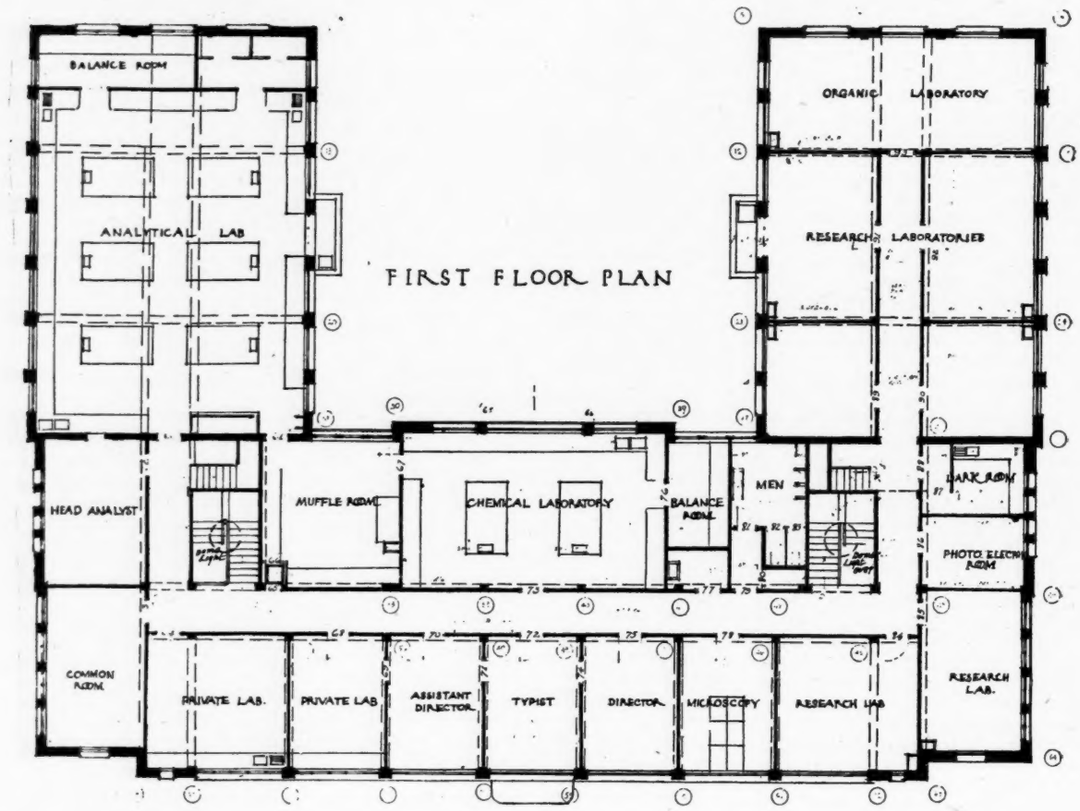


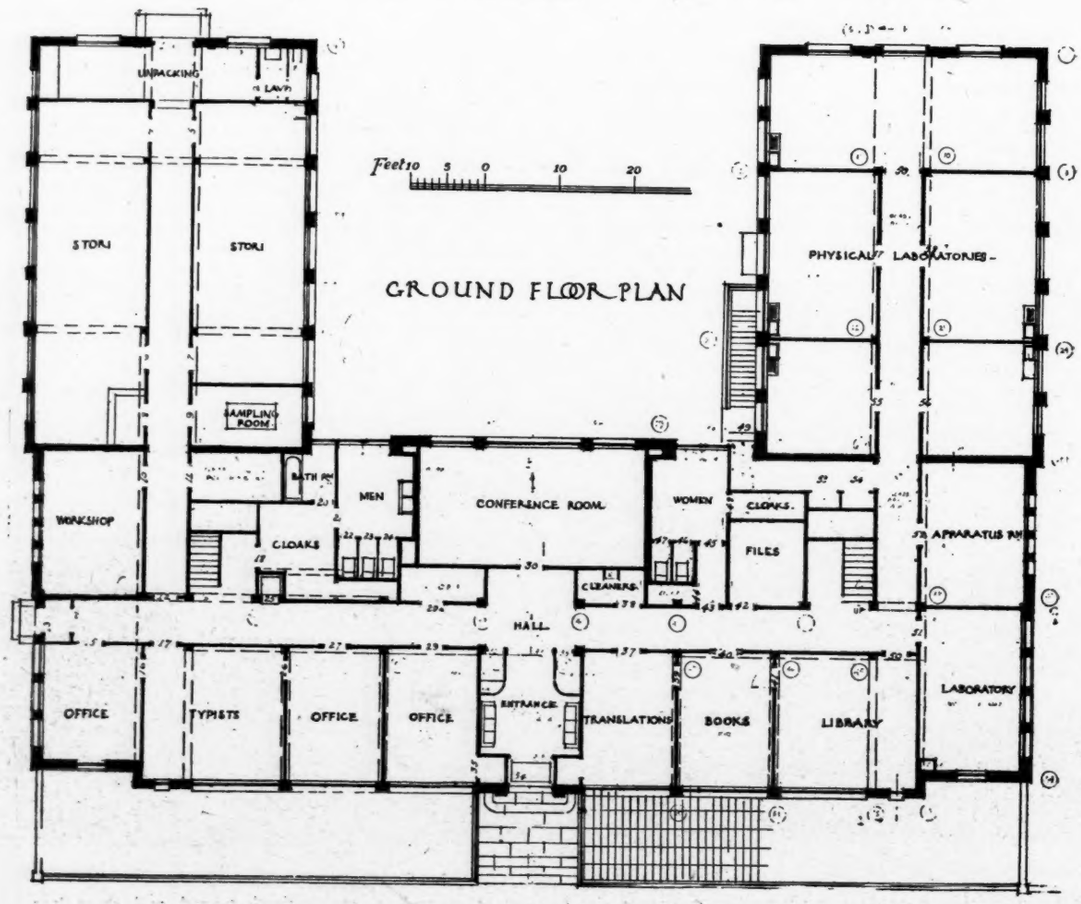
MANOR COURT, DIDSBURY, MANCHESTER.

This proposed block of flats is situated on a corner site between Grange-lane and Wilmslow-road, and comprises 76 flats. The form of plan was decided upon as that which enabled each flat to obtain the maximum of sunshine all the year round. An interesting feature of the scheme is the provision of an exceptionally spacious entrance foyer, well lit by casement windows and giving access to a paved terrace overlooking the forecourt. The architects are MESSRS. MARSHALL AND TWEEDY, FF.R.I.B.A.

GLASS RESEARCH LABORATORIES, ST. HELENS, LANCS.

MR. HERBERT J. ROWSE, F.R.I.B.A., ARCHITECT.





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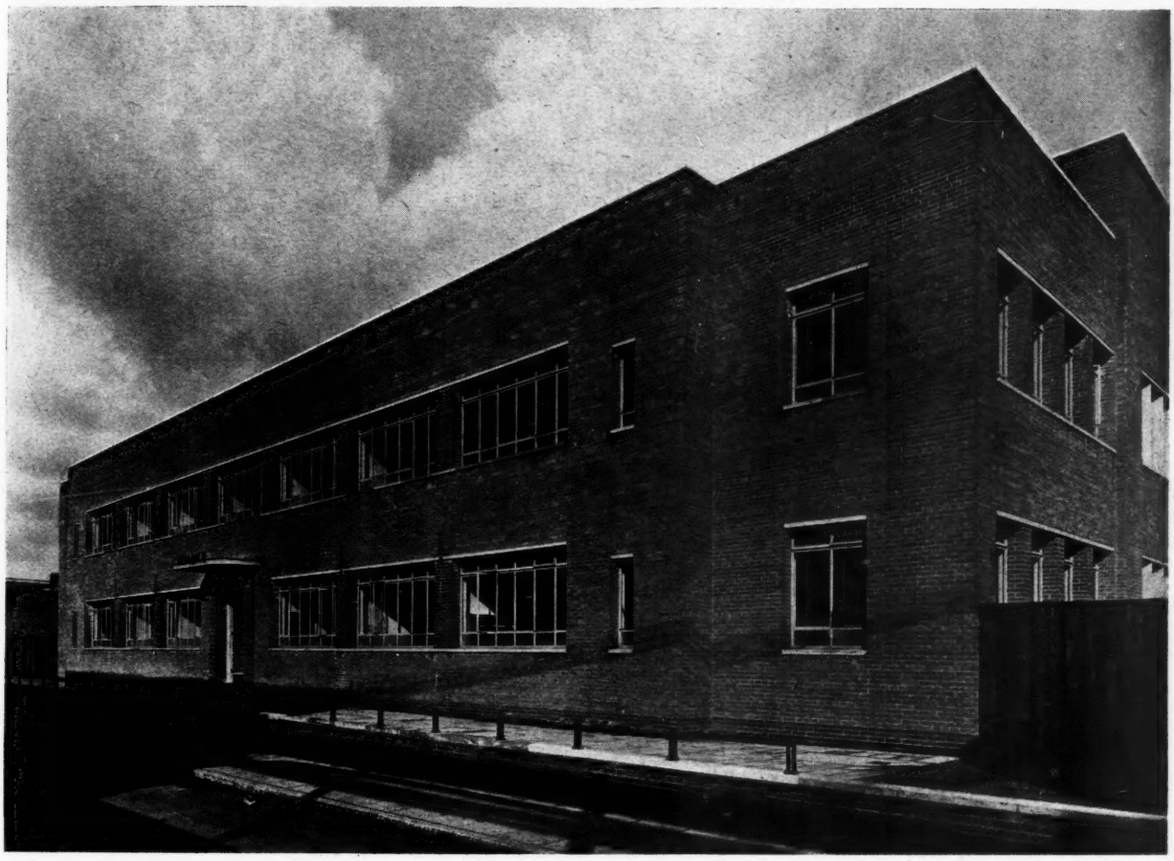


GENERAL.—The building contains research and analytical laboratories and allied administrative offices for Messrs. Pilkington Bros., Ltd. Requirements included provision of a large analytical laboratory for routine analysis of manufacturers' products, physical laboratories, research laboratories, chemical laboratories, conference room, library and an isolated still room for hydrofluoric acid.

PLAN.—Owing to the area of site being small, the building has been placed on the eastern side of the site. This affords easy access, on the western side of the building, for delivery vehicles to the back.

The open court plan was adopted, providing east and west lighting and cross ventilation to the main laboratories which are placed in two wings at the rear of the building. The administrative accommodation has been placed in the main block and has a south aspect.

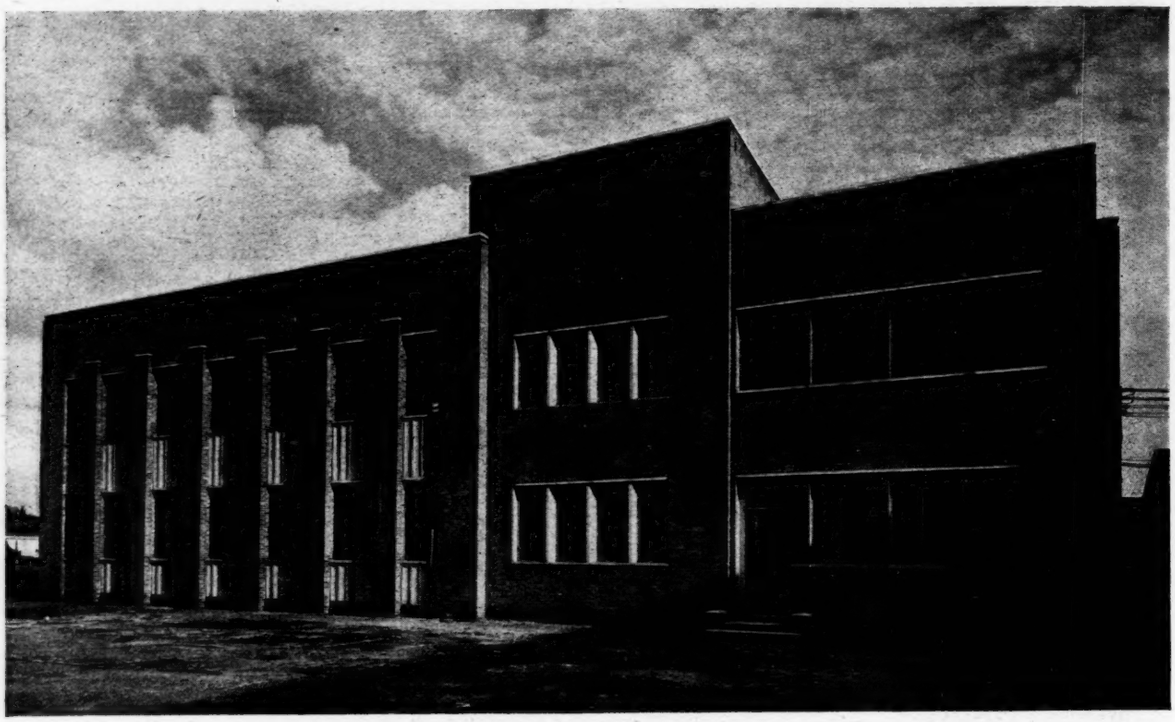
Future extensions in the form of one-storey blocks can be provided on the west and east ends of the main block.

CONSTRUCTION AND EXTERNAL FINISHES. — Steel-frame construction has been employed, external walls being faced with 2-in. sand-

Above: ENTRANCE FRONT.
Right: DETAIL OF ENTRANCE.

MR. HERBERT J. ROWSE, F.R.I.B.A., ARCHITECT.

GLASS RESEARCH LABORATORIES, ST. HELENS, LANCS.



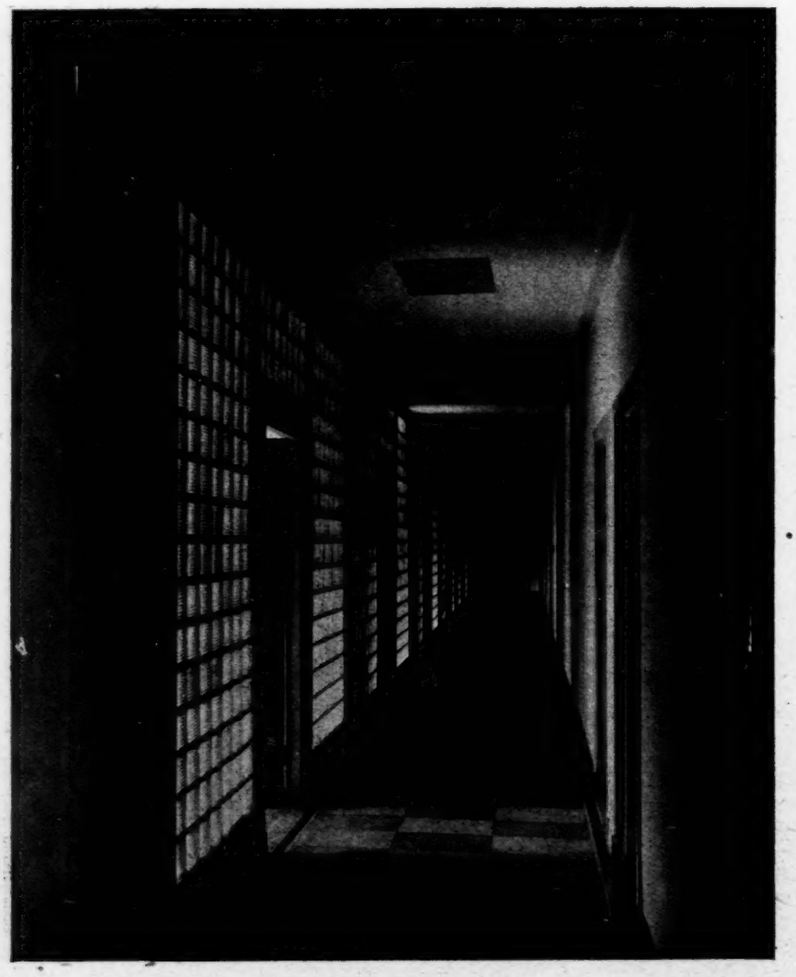
faced bricks, with main entrance, plinth and window piers in darker shade of bricks. Floors are hollow-tile, and there are brick partitions. The staircases are of reinforced concrete. The flat roofs are built-up of hollow tiles insulated with cork and finished with asphalt. Copings, dressings and the cast stone pavings are all in Victoria stone.

INTERNAL FINISHES.—Floors are: Research laboratory, wood block; main conference room, linoleum; and entrance hall, brown quarries.

Walls are plaster, except in the entrance hall, where they are covered with "Vitrolite." Glass brick walls have been built to main corridor. Doors are flush, painted.

SERVICES.—Heating is by panels in the ceilings. Analytical, chemical and research laboratories are air-conditioned, special fans drawing off fumes from fume cupboards through acid-resisting ducts. A duct in the suspended ceiling to corridors provides accommodation for services of gas, electricity, compressed air, vacuum and hot and cold water. Rain-water and waste pipes are concealed in vertical metal ducts with access panels.

The general contractors were Messrs. William Moss and Sons, Ltd., and sub-contractors and suppliers were: Banister Walton and Co., Ltd., structural steelwork; Kleine Co., Ltd., concrete floors and roofs; Pilkington Bros., Ltd., facing bricks, dome lights, polished plate glass to windows, glass bricks and Vitrolite; Liverpool Artificial Stone Co., Ltd., cast stone and dressings; Val de Travers, asphalt; Mellowes and Co., metal windows; Lenscrete, Ltd., flat roof lights; R. W. Haughton, Ltd., plumber; Richard Crittall and Co., Ltd., ventilation and heating; John Hunter and Co., electrical services; O. C. Hawkes, electric light fittings; Baxendale and Co., sanitary fittings; Waygood Otis, Ltd., service lift; Baird and Tatlock, Ltd., laboratory fittings; R. W. Brooke and Co., Ltd., wood block flooring; Korkoid Decorative Floors, Ltd., korkoid linoleum flooring; Conway and Co., quarry tiling and white vitrified hexagon floor tiling; J. P. White and Sons, Ltd., flush doors; Quiggin Bros, Ltd., hardware, staircase balustrade and external railings.

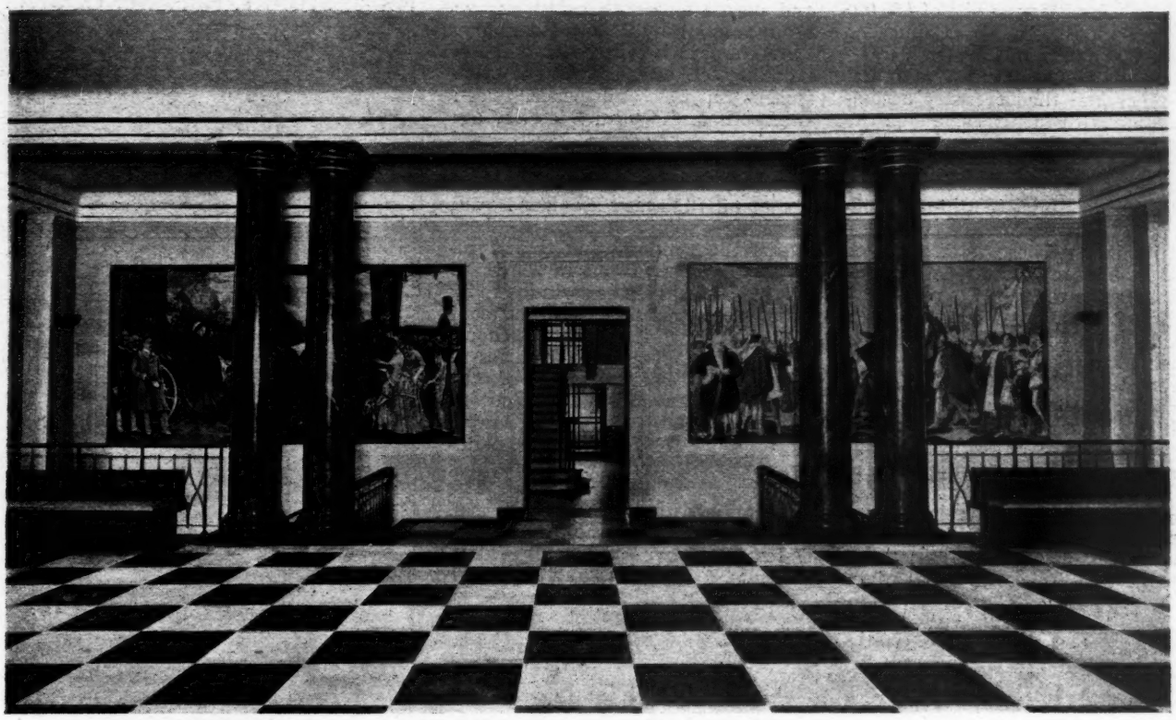


Above: END ELEVATION.
Left CORRIDOR, SHOWING USE OF GLASS BRICKS.

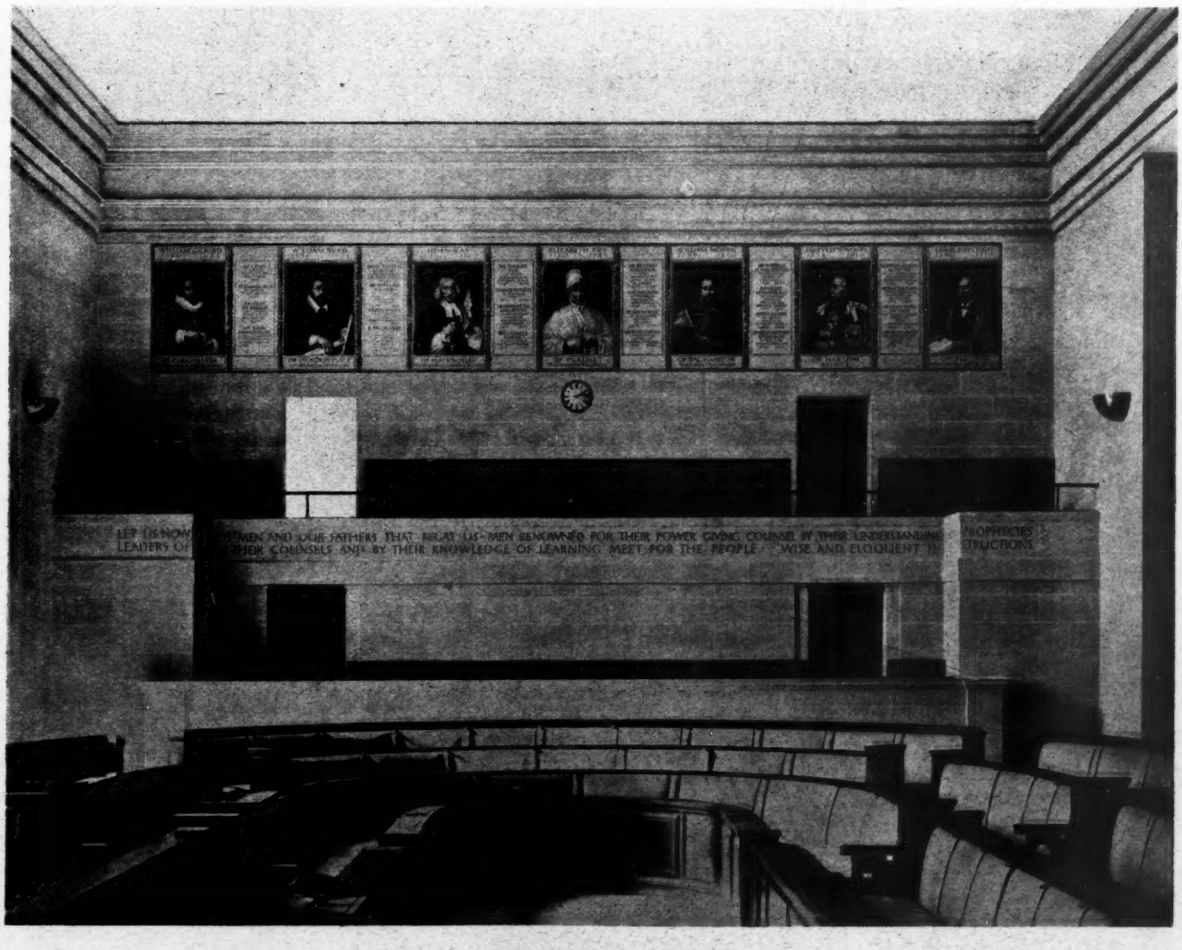
MR. HERBERT J. ROWSE, F.R.I.B.A., ARCHITECT.

COUNCIL CHAMBER SUITE, ESSEX COUNTY HALL, CHELMSFORD.

MR. E. VINCENT HARRIS, A.R.A., ARCHITECT, in collaboration with MR. J. STUART, F.R.I.B.A., COUNTY ARCHITECT.



ANTE-ROOM TO COUNCIL CHAMBER.



COUNCIL CHAMBER, SHOWING PUBLIC GALLERY

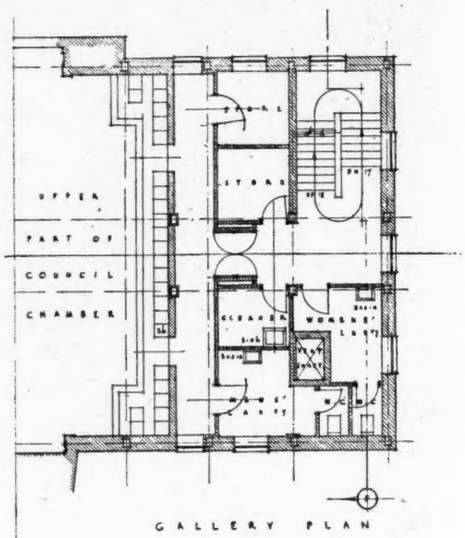
COUNCIL CHAMBER SUITE, ESSEX COUNTY HALL, CHELMSFORD.

MR. E. VINCENT HARRIS, A.R.A., ARCHITECT, in collaboration with MR. J. STUART, F.R.I.B.A., COUNTY ARCHITECT.

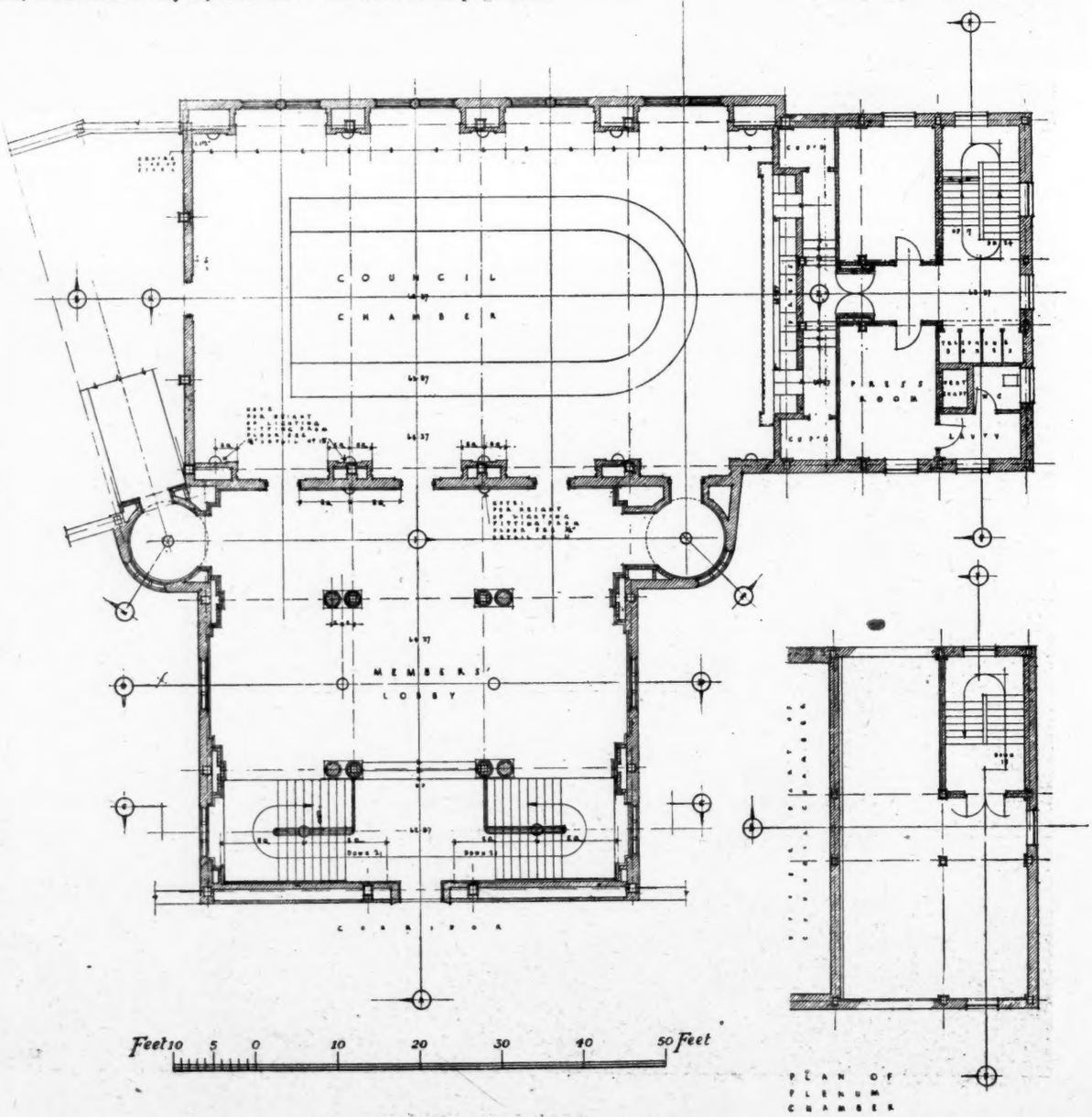
During the course of the erection of the County Office building, by Mr. J. Stuart, F.R.I.B.A., County Architect for Essex, a gift of £30,000 was received from Mr. Councillor W. J. Courtauld, of Halstead, to be spent on providing a Council Chamber and the necessary accommodation with furnishings, etc., the cost and character of which were in excess of those proposed by the County.

This necessitated certain modifications in the planning of these apartments. These were arranged by Mr. Vincent Harris, A.R.A., in collaboration with the County Architect. After consideration it was decided the motif of the decorative scheme should be the "Story of the Essex People." The Council Chamber is 72 ft. 6 in. by 44 ft., and is lighted by four windows each 20 ft. by 10 ft. Axial and opposite each window, mural panels, each 10 ft. by 10 ft., depicting important events in the life of the county, have been carried out by Colin Gill, B. Fleetwood-Walker, A. R. Thomson, A.R.A., and Robert Lyon, and on the north and south walls of the Chamber portraits of famous Essex men and maps of the county to-day and in the sixteenth century have been painted by Henry Rushbury, R.A. The paintings in the Ante Room, recalling acts of two famous English Queens in war and peace, Queen Elizabeth and Queen Victoria, are by A. K. Lawrence, R.A., and Neville Lewis, respectively.

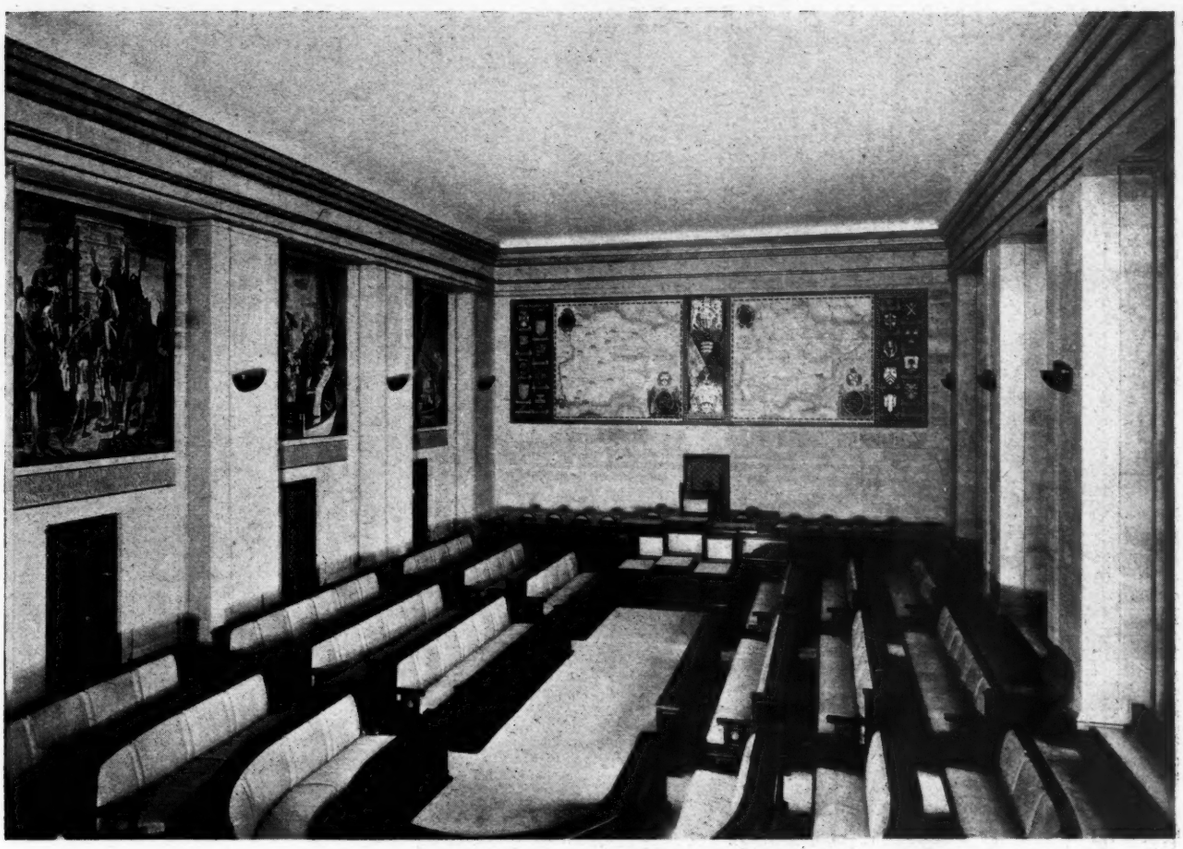
The walls of the Council Chamber, Ante and Staircase are faced with Doulting stone, Chelynch bed, whilst the windows and their mullions are carried out in Portland stone. Two of the windows by Kruger Gray are filled with the arms of founders of the ancient schools and of the Abbeys and Priories of Essex. The joinery work of the Council Chamber is carried out in black oak inlaid with brass, having pig-skin upholstery. A heavy, hand-knotted Wilton carpet is provided in the Council Chamber. The general contractors were Messrs. T. J. Bailey and Son, Chelmsford. A list of sub-contractors engaged on the work is on page 1041.



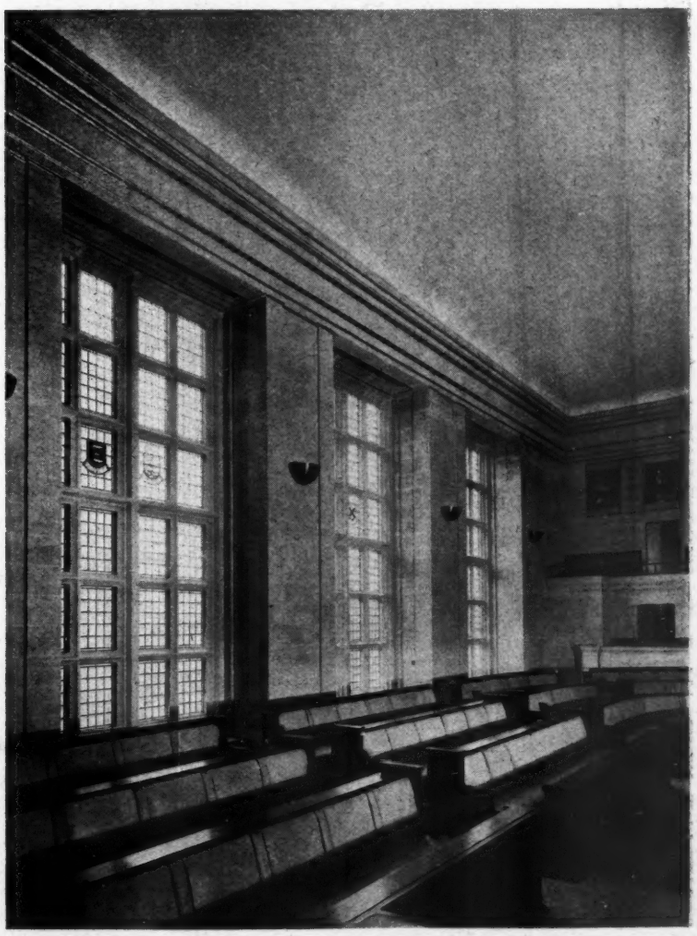
GALLERY PLAN



PLAN OF PLENUM CHAMBER



GENERAL VIEW OF COUNCIL CHAMBER.

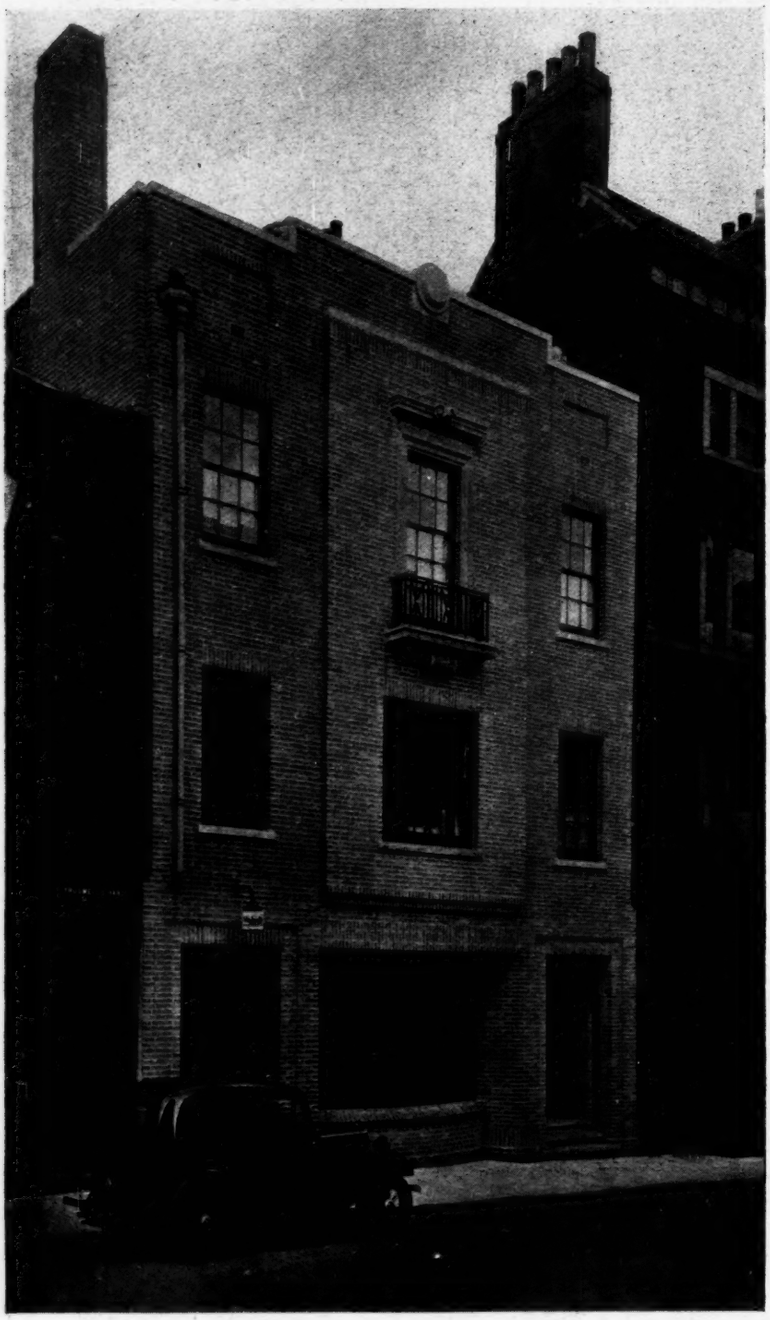


Right : WINDOWS IN COUNCIL CHAMBER.

COUNCIL CHAMBER SUITE, ESSEX COUNTY HALL, CHELMSFORD.

MR. E. VINCENT HARRIS, A.R.A., ARCHITECT, in collaboration with MR. J. STUART, F.R.I.B.A., COUNTY ARCHITECT.

SHOWROOMS AND OFFICES, CASTLE GATE, NOTTINGHAM



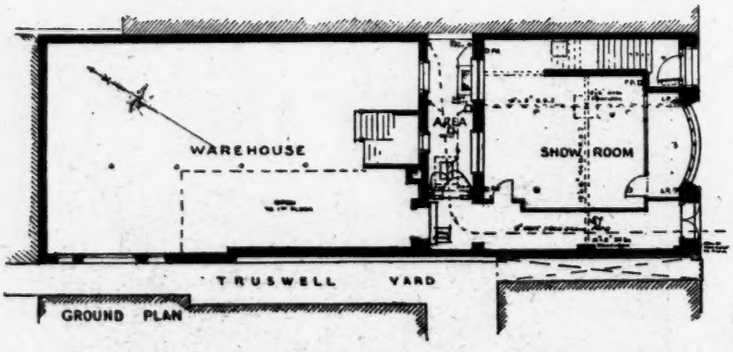
MESSRS. SWANN AND WRIGHT, A.R.I.B.A., ARCHITECTS.

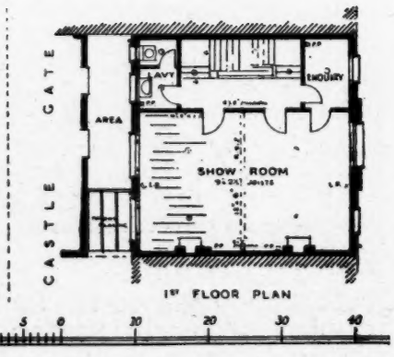
PROBLEM.—The building occupies a 30-ft. frontage in a street which is fortunate in retaining many of its older, Georgian buildings. It was therefore desirable that any rebuilding therein should be carried out in accordance with the general character of the street. The premises are built on a site, very usual in Nottingham, which is honeycombed with rock cellars and caves; in this case, part only of the existing cellars have been retained.

PLANNING OUTLINE.—The building is devoted to warehouse and showrooms, the ground floor alone being in connection with a warehouse at the rear. The first and second floors are showrooms, amply lighted and having large windows to the rear, approached by a top-lighted staircase entirely separated from the ground floor.

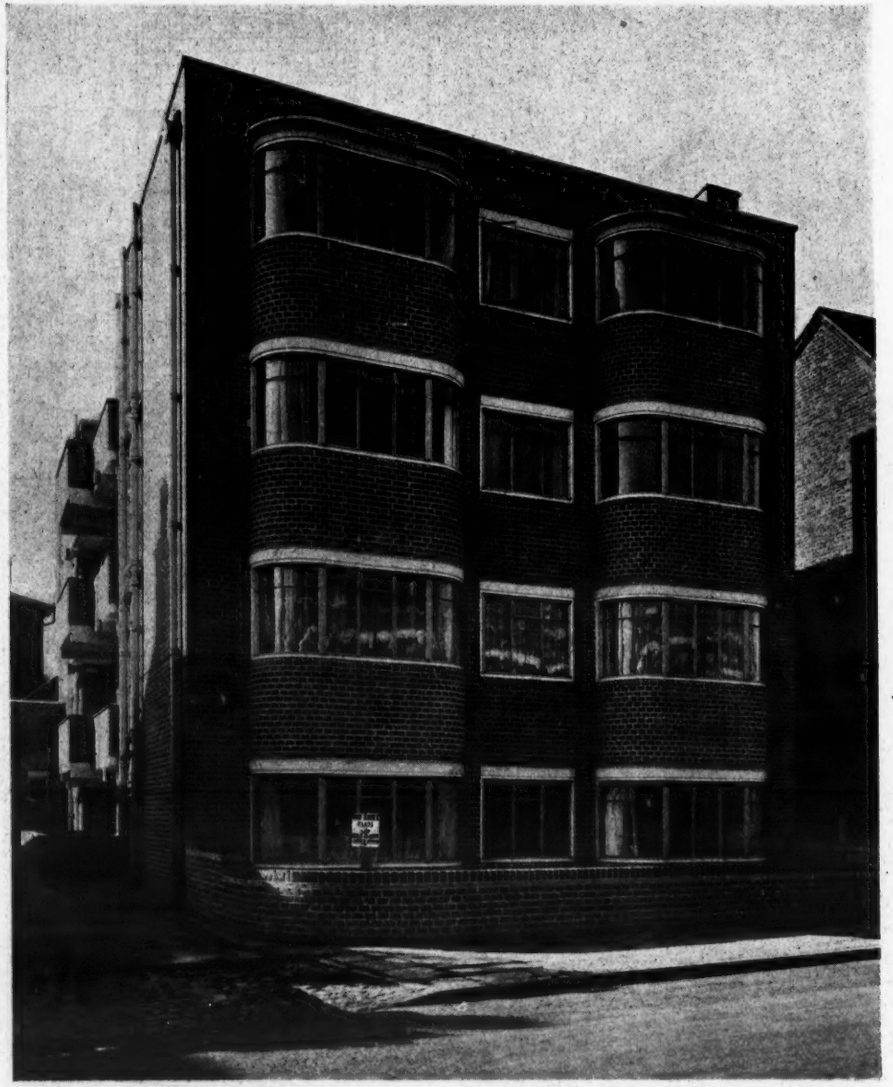
CONSTRUCTIONAL OUTLINE. — The building is steel-framed in parts, loads of floors being largely carried direct by stanchions to the foundations; the walls are of brick. The façade is carried out in local handmade bricks of biscuit colour, eleven inches long and two inches wide, with half-inch flush mortar joints, having a comparatively large area of plain brickwork, essential to a restful, quiet and unpretentious building, such as was desired. Electric heating is provided to showrooms.

The staircase landing, lavatories and dadoes thereto are carried out in terrazzo, banded with ebonite, executed by the Croft Granite, Brick and Concrete Co. The ornamental ironwork was executed by Messrs. Doodson and Bain, Ltd., of Manchester. The general contractors were Messrs. T. Fish and Sons, of Nottingham.

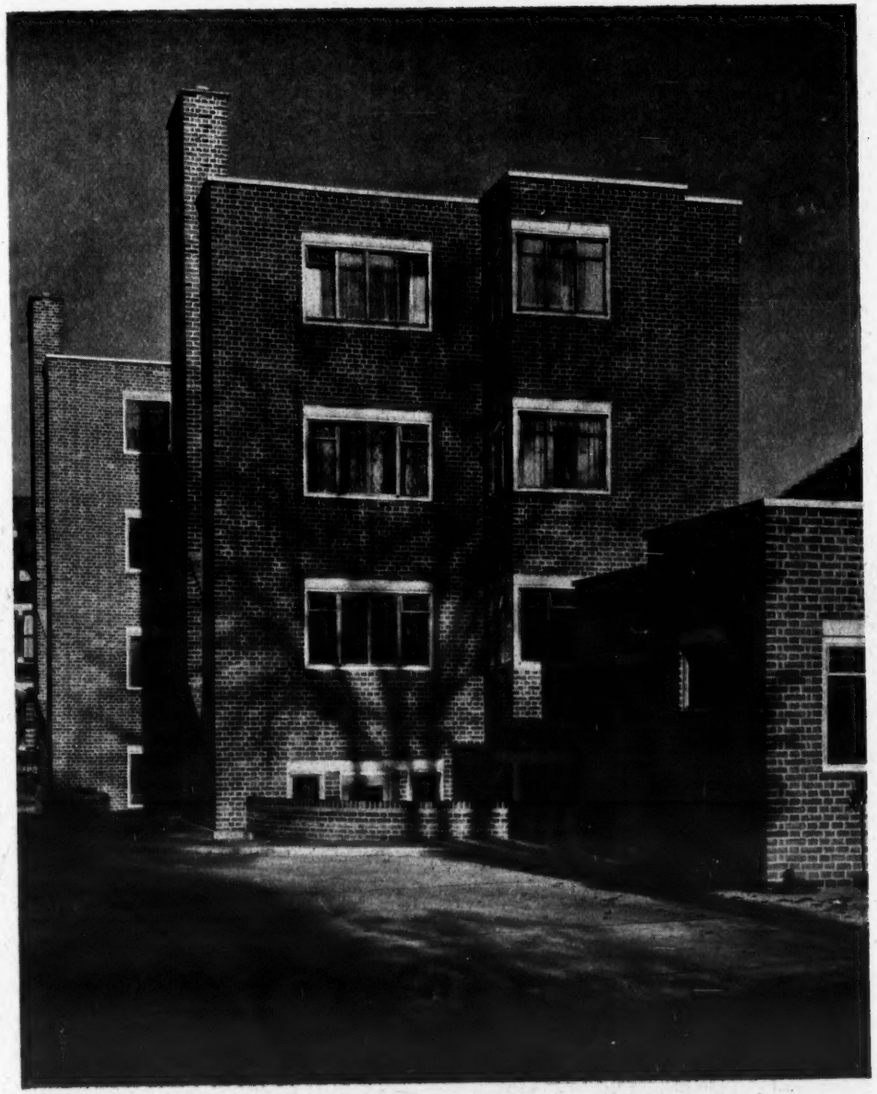




FLATS AT CLISSOLD CRESCENT, STOKE NEWINGTON, N.16: MR. G. ALAN FORTESCUE, F.R.I.B.A., ARCHITECT.

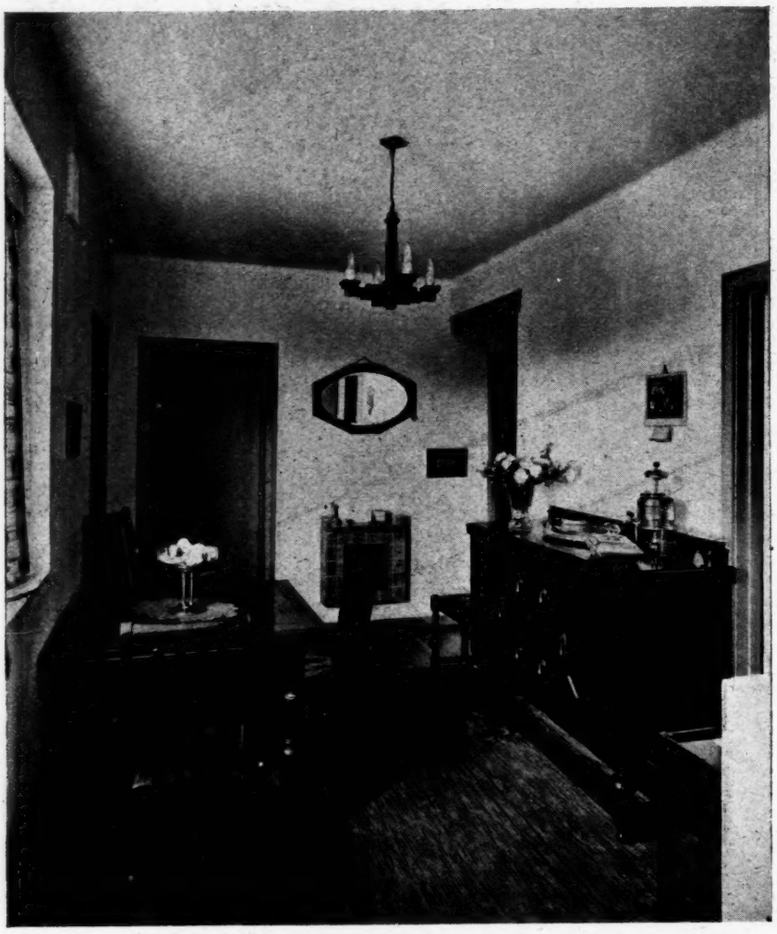


ELEVATION TO PARK LANE.



THE REAR ELEVATION.

FLATS AT CLISSOLD CRESCENT, STOKE NEWINGTON, N.16.



A DINING-HALL.

MR. G. ALAN FORTESCUE, F.R.I.B.A., ARCHITECT.

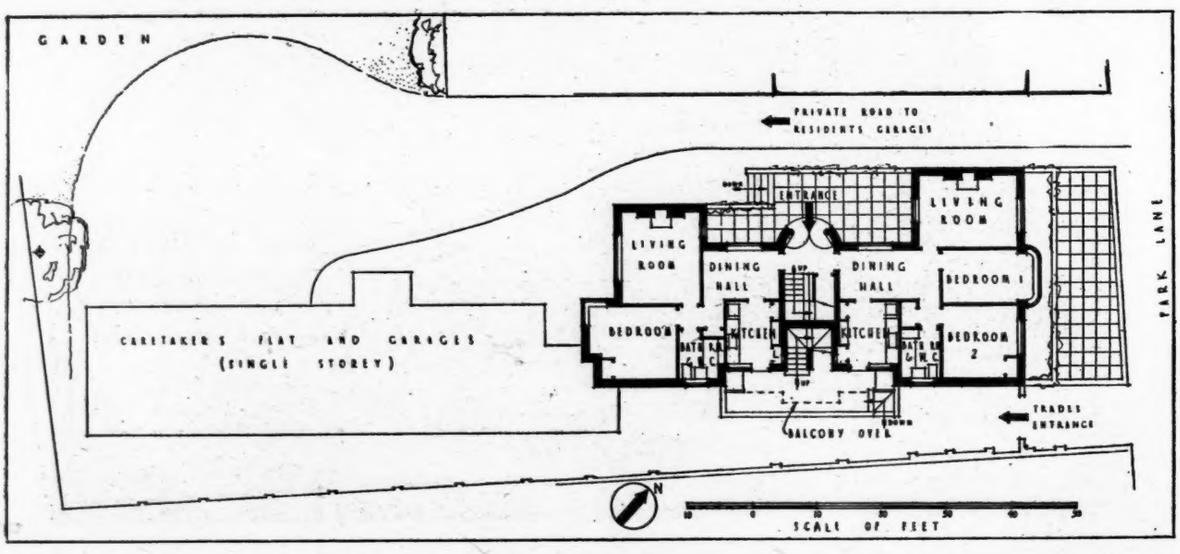
PLANNING.—This block of flats comprises four flats each consisting of two bedrooms, one living-room, one dining-hall, with bathroom and kitchen; and four flats consisting of one bedroom, one living-room, one dining-hall, with bathroom and kitchen. It was decided that, instead of a passage leading to the several accommodations, a dining-hall should be utilised, so that a table could be placed within the same and therefore give extra accommodation.

MATERIALS.—The block has been built with Dutch brickwork—the colours of which are a pleasant purple to brown. The windows are painted in apple green, and are built into wood frames. The block has a flat roof covered with "Permanite" asphalt. The dining-halls are covered with oak flooring in narrow strips. The staircase walls have been treated with "Wallcraft." All doors are of the flush type.

HEATING.—Heating by boilers was not considered essential, and all the flats are provided with multi-point gas water heaters.

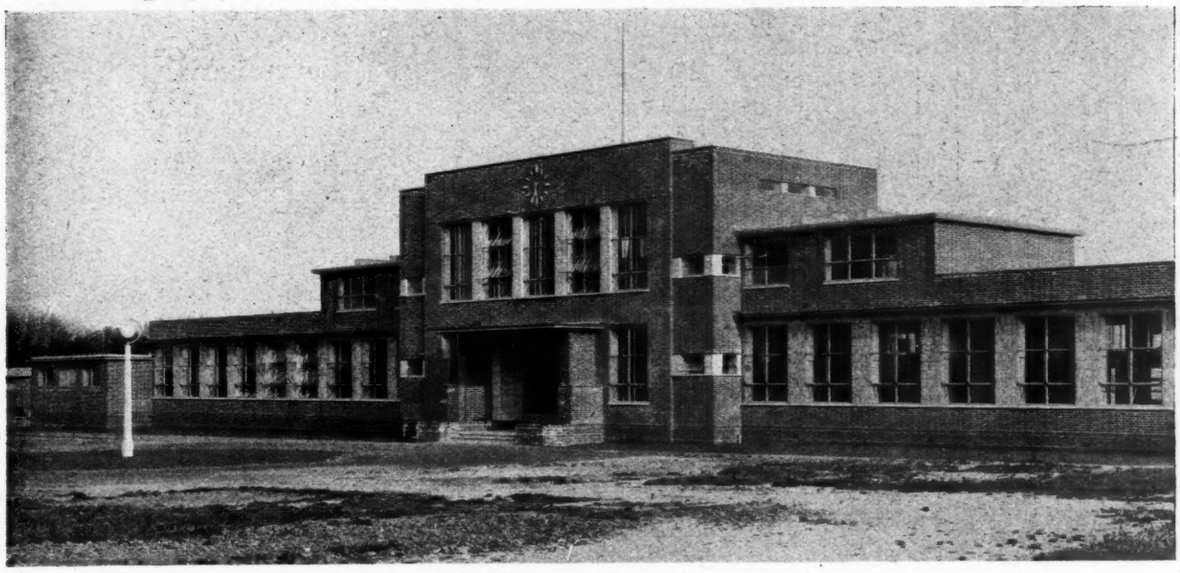
INTERNAL FITTINGS.—The bathroom and kitchen are tiled with cream tiles and green borders, and the kitchen is fitted out with flush fittings.

The contractors were Messrs. W. Silk and Son, 13, Homerton High-street, E.9. Sub-contractors were:—Horsley Smith and Co. (Floors), Ltd., wood block floors; Crittall manufacturing Co., Ltd., metal windows; Smith's Fireproof Floors, Ltd., hollow-tile floors; Permanite, Ltd., asphalt roofing; Ascot Gas Water Heaters, Ltd., gas water heaters; O'Brien Thomas and Co., Ltd., fireplaces and sanitary fittings; Belcar, Ltd., electrical installation; Brick Makers and Factors, Ltd., facing bricks; Stuart's Granolithic Co., Ltd., copings and lintols; Kandya, Ltd., kitchen fittings; Alfred Slade, internal decoration; Walpamur Co., Ltd., paint; Austin Veneer and Panel Co., Ltd., flush doors

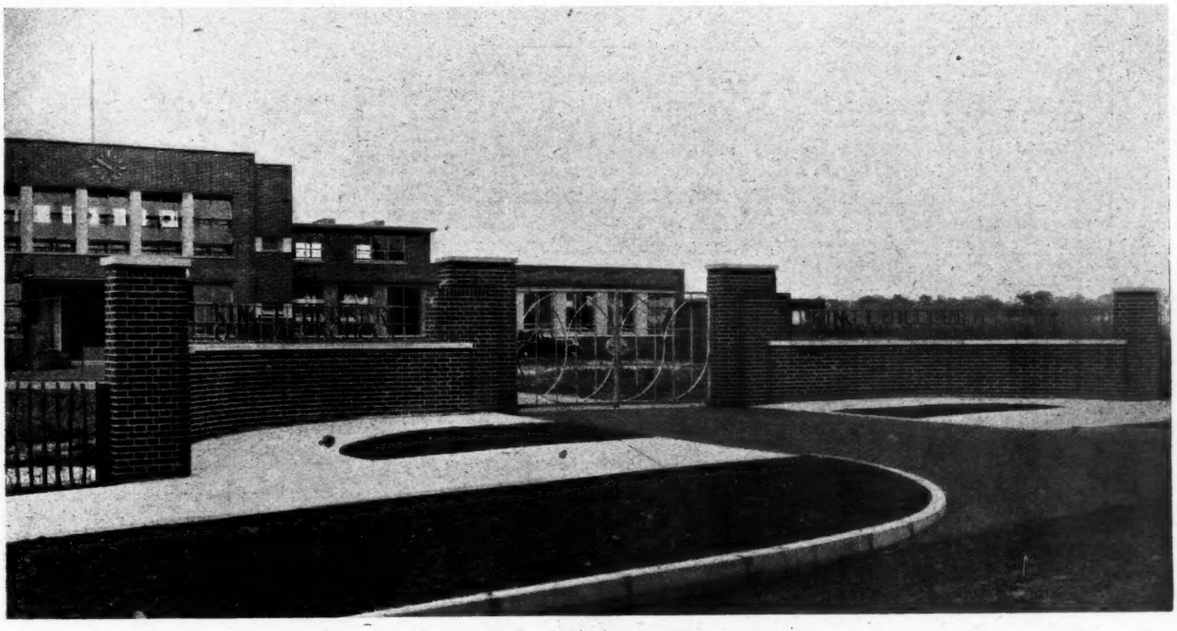


GROUND-FLOOR PLAN.

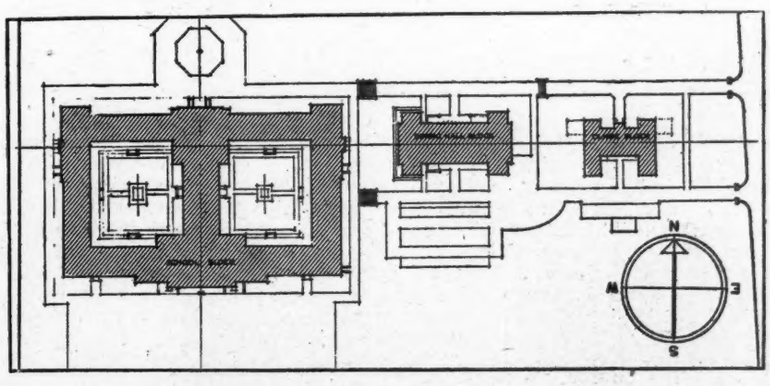
KING ETHELBERT CENTRAL SCHOOL, WESTGATE-ON-SEA.



VIEW OF ENTRANCE FRONT.



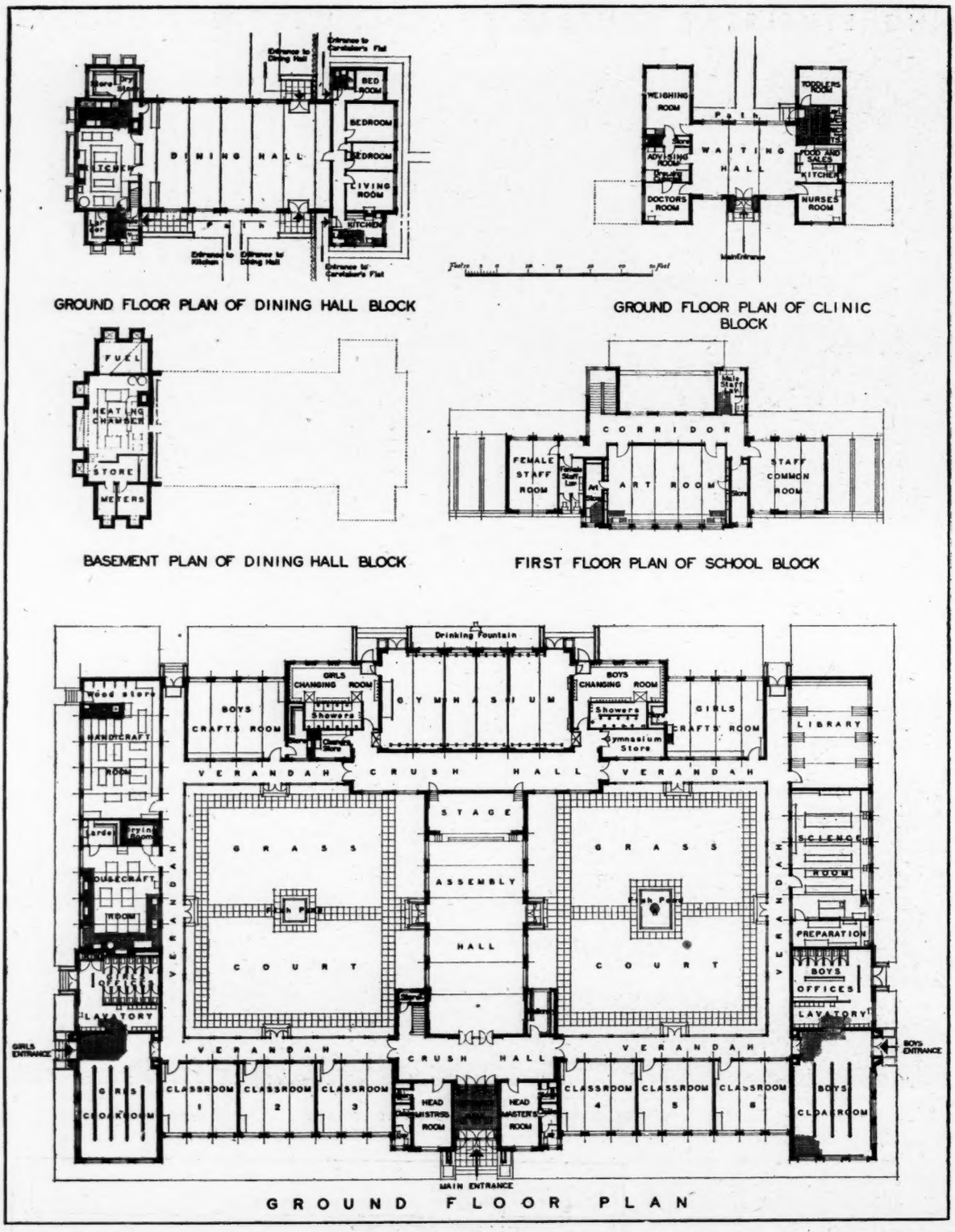
VIEW OF ENTRANCE FRONT FROM MAIN GATES



Right: THE BLOCK PLAN.

MR. W. R. H. GARDNER, L.R.I.B.A., ARCHITECT.

KING ETHELBERT CENTRAL SCHOOL, WESTGATE-ON-SEA.



GROUND FLOOR PLAN OF DINING HALL BLOCK

GROUND FLOOR PLAN OF CLINIC BLOCK

BASEMENT PLAN OF DINING HALL BLOCK

FIRST FLOOR PLAN OF SCHOOL BLOCK

GROUND FLOOR PLAN

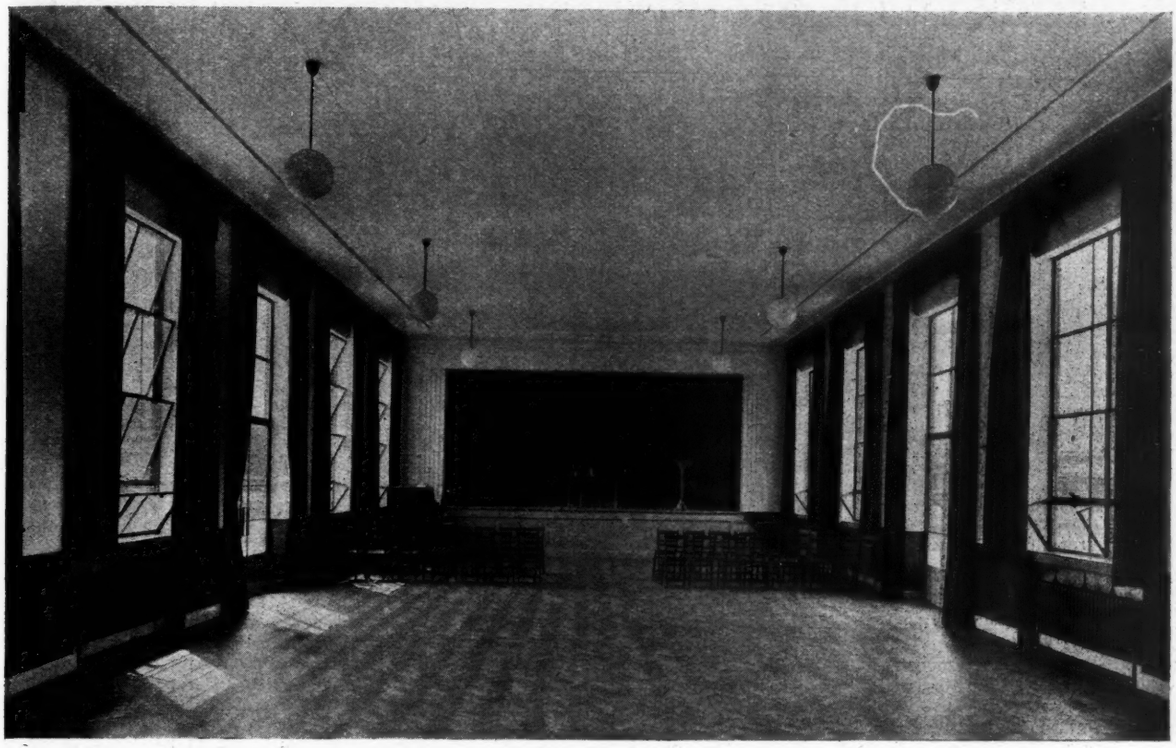
SITUATED on Canterbury-road on a site of 16 acres, this school is provided with a fully equipped canteen and caretaker's residence. A branch child welfare clinic is provided in a separate building.

LAYOUT AND DESIGN.—The lay-out and general design of the school buildings have been influenced by the site levels and subsoil. There is a fall of some 20 ft. in the site from west to east, and having regard to the extensive groundwork necessitated by the surface levels and varying depths to which the foundations had to be taken, it was decided: (*a*) To separate the school buildings into three detached blocks, each at different site levels; (*b*) to design each block as compactly as possible; and (*c*) to adopt a form of construction which would admit of piers and beams for foundation work.

The main school block has, therefore, been designed on the quadrangle principle to conserve space, the site has been levelled out for each block of buildings, and mass concrete piers with reinforced concrete beams and suspended floors are provided to that part of each building on made-up ground. The clinic block, however, had to be carried entirely on piers and beams as the site of this building was in a hollow.

CONSTRUCTION.—The buildings are practically fireproof, having solid concrete or suspended reinforced concrete floors, cavity brick walls, reinforced concrete flat roofs, metal windows and metal main doors. The flat roofs have

MR. W. R. H. GARDNER, L.R.I.B.A., ARCHITECT.



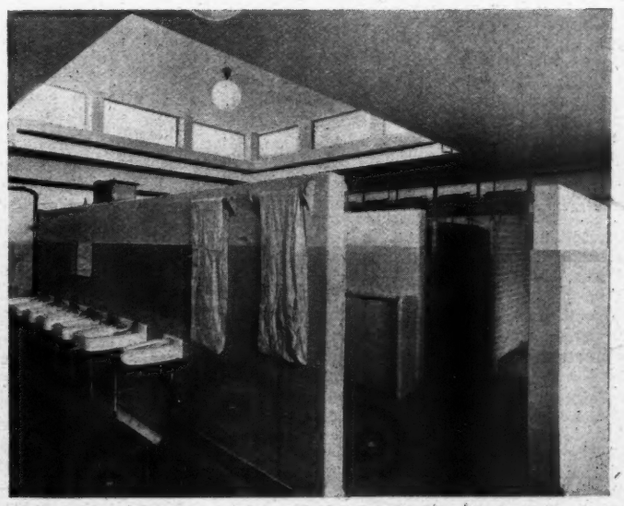
THE ASSEMBLY HALL.

been insulated with 1-in. cork under the asphalt, and the asphalt has been limewashed to aid reflection of the solar rays. Except in the case of two classrooms, where rooms are built over them, the ceilings are flat, the beams projecting above the flat roofs instead of below the ceilings. The windows are pivot-hung above hopper lights, the latter being fitted with side cheeks. Cross ventilation is provided throughout. The ceilings are of "Tentest" boarding, which was fixed in position as permanent shuttering to the reinforced concrete, finished with a skimming coat of plaster. The heating is by radiators and hot-water pipes on the low-pressure hot-water system, and the hot water is supplied through calorifiers. The school buildings are planned to accommodate 440 boys and girls as a mixed central school.

The whole of the building work was estimated to cost £40,000. The quantity surveyors were Messrs. E. C. Harris and Partners, and Messrs. Rice and Son, Ltd., of London, Brighton and Margate, were the building contractors.

The following specialists were employed: "Twisteel" Reinforcement, Ltd., reinforced concrete; Engert and Rolfe, Ltd., asphalt roofs; Crittall Manufacturing Co., Ltd., metal windows and doors; G. N. Haden and Sons, Ltd., heating and hot-water installation; Horsley, Smith and Co. (Floors), Ltd., teak and oak flooring; S. W. Farmer and Son, Ltd., staircase balustrading, gates and fencing; Fenning and Co., Ltd., terrazzo paving; W. Jarrett, plastering; W. H. Griffiths, wall and floor tiling; Modern Floorings Co., linoleum dadoes; International Time Recording Co., Ltd., synchronous clocks and gongs; Bobby and Co., Ltd., Margate, curtains, sunblinds and staff-room furniture; Tidmarsh and Sons, stage fittings; E. Saunders, Ltd., electrical wiring; L. G. Hawkins and Co., Ltd., electrical fittings; A. Olby, Ltd., sanitary fittings and ironmongery; Constable and Hart, tar paving; Andrew Bentley, Ltd., science-room fittings and school furniture; Educational Supply Association, Ltd., gymnasium equipment; The Westgate and Birchington Gas Co., gas cooking apparatus and emergency gas lighting throughout.

THE ART ROOM.



BOYS' LAVATORY

SHEFFIELD, S. YORKS AND DISTRICT SOCIETY OF ARCHITECTS

PLANNING LAW AND THE PROBLEM OF ADVERTISEMENTS.

Mr. Desmond Heap, LL.M. (L.A.M.), Chief Assistant Solicitor to the Leeds Corporation, recently delivered a lecture on "Planning Law and the Problem of Advertisements," at a meeting of the Sheffield, South Yorkshire and District Society of Architects and Surveyors, at the University, Western Bank, Sheffield. Mr. W. G. Davies, F.R.I.B.A., the President, was in the chair.

Mr. Heap began by saying that planning law was concerned not so much with persons as with property, and his lecture was concerned not with "personal injuries," but with injuries to the countryside and the well-planned buildings and structures of those areas which had been subject to man's development.

In considering the effect of planning law upon advertisements, he would like to deal, first of all, with the state of affairs which exists during the period of interim development — development taking place within the area of a proposed scheme between the date on which the planning resolution became effective, and the date when the planning scheme ultimately came into operation. During that period all persons indulging in "development" as that word was defined in s. 53 of the Town and Country Planning Act, 1932, should, if they were wise, obtain consent to their development from the appropriate interim development authority although it was not essential by law that such consent should be obtained. In granting consent to such development the interim development authority might impose conditions, and it frequently happened that such conditions referred to the display of advertisements on the land which was the subject of the application, and by means of those conditions the authority was able to secure, in advance, that any advertisements displayed would not injure the amenities of the district.

End of Interim Period.

"When a planning scheme comes into operation the interim period comes to an end, and for future control over advertisements the responsible authority acting under the scheme must turn to the provisions of the scheme itself and to s. 47 of the Town and Country Planning Act, 1932. It may be mentioned at once the provisions of s. 47 are not in all respects particularly clear, and whether the control afforded by that section is sufficient for 'securing amenity' and 'protecting existing amenities,' to use the words of s. 1 of the Act, remains to be seen."

It was important to notice at once that the powers conferred by the section, whatever might be their scope, would only be available to the responsible authority under a scheme to such an extent as might be provided for in the scheme itself. That was to say, the powers might be operated only as regards such portions of the area covered by the scheme as were specified by the scheme itself as being portions to be protected under the 1932 Act in respect of advertisements. If the powers of s. 47 of the Act had been adequately conferred by a scheme upon the responsible authority, that authority, in a case where "an advertisement displayed or a hoarding set up . . . seriously injures the amenity of land" protected under the scheme in respect of advertisements, might require its removal within not less than 28 days.

The speaker continued: "There is a right of appeal to a court of summary jurisdiction by any person who is required to remove an advertisement or hoarding if he desires to allege that the advertisement or hoarding does not seriously injure the amenity of any land protected under the scheme. The court must, by sub-s. (3), allow the appeal if it is satisfied that there is no serious injury to amenity or, if not so satisfied, must dismiss it, but may, nevertheless, allow a further period of 28 days for compliance with the terms of the order. If the order is not duly complied with the responsible authority may, under sub-s. (4), remove the advertisement or hoarding complained of and may recover from the owners thereof the expenses of such removal.

"Though it is not mentioned in s. 47 of the Act it should be appreciated that any person aggrieved by the decision of the court of summary jurisdiction in the case of an appeal to such a court under s. 47 (2) may, by s. 39 of the Act, appeal further to Quarter Sessions within a period of 28 days."

By s. 47, sub-s. (5) a responsible authority might, if the scheme so provided, authorise the display of advertisements upon land which was declared by the scheme to be protected under the Act in respect of advertisements.

In s. 47, sub-s. (6) there were certain limitations on the exercise of powers conferred upon a responsible authority by earlier sub-sections, for sub-s. (6) provided that those powers might not be exercised in respect of four classes of advertisements, the first class of which was, of course, the class of advertisements which had been expressly authorised by the responsible authority acting under sub-s. (5) already referred to. No complaint could be made about that. The second class of protected advertisements were dealt with in sub-s. (6), subpara. (ii), and were those which related solely to a trade or business carried on or to an entertainment, meeting, auction or sale to be held upon, or in relation to, the land upon which the advertisement appeared.

"Thirdly, advertisements 'on the door or in the window of a building' may not, by sub-s. 6 (iii), be prohibited entirely by the responsible authority, but they may be subjected to the same amount of control as those mentioned in sub-s. 6 (ii), the important difference being that whilst the advertisements mentioned in sub-s. (6) (ii) must relate in some way to the land on which they appear, this limitation does not apply to the advertisements referred to in sub-s. (6) (iii), which latter advertisements may have reference to matters in no way related to the property on which they appear.

Four Classes of Hoardings.

"Fourthly and finally, by sub-s. (6) (iv) a responsible authority is prevented for a period of five years from the coming into operation of the scheme from taking any action in respect of four classes of advertisements and hoardings. These are as follows: (*a*) Hoardings erected or in use for advertising purposes before the date when the resolution to prepare the scheme took effect be receiving the approval of the Minister of Health under s. 6 (2) of the Act; (*b*) advertising stations (whatever these are, for the Act does not define them) used by advertising contractors on that date; (*c*) advertisements displayed at any time during the five-year period upon any such hoarding or advertising station as is mentioned in (*a*) or (*b*) respectively above; (*d*) any advertisement on display on the date of the planning resolution becoming effective."

Concluding, the speaker said that such were the powers of controlling advertisements and hoardings by means of a scheme made under the Town and Country Planning Act, 1932. The provisions of s. 47 were guardedly drawn, and being obviously the result of an attempt to compromise between the forces of the countryside on the one hand and the billposting concerns on the other, were not entirely free from "nice points" and, in consequence, would not always be easy of application.

PROFESSOR REILLY'S REMINISCENCES*

Professor Reilly has been so dominating a personality in the realm of architectural education for the last thirty years or more that on these grounds alone his autobiography* must be of particular interest. He is, however, much more than a professor of architecture, however eminent. Not only is he a gifted writer but he has a very dynamic personality. So that when he sets out to write the story of his life it is something of an adventure both for the author and the reader.

These memoirs, as one would expect from anyone as frank as C. H. Reilly, are very outspoken, both as regards himself and his friends. This, however, does not detract from their interest. It may be that some among his "victims" may consider they are a little too interesting!

The early chapters dealing with his life as a boy are particularly vivid, and have an almost Proust-like quality. One sees the small Reilly rebelling against and being moulded by his environment. It must be remembered that Reilly is an Irishman by descent, and like so many of his countrymen, has a certain delight in being against the Government—any government. From blacking a Don's eye at Cambridge and joining the intransigeant group of Liverpool University, to a serene retirement enlivened with certain differences with the R.I.B.A., is a continuous and exciting story.

It is something of an anomaly that Reilly, who has the least academic of minds, should have found his greatest success in an academic role.

For most architects the chief interest of this autobiography will be the account of what the author did for the Architectural School at Liverpool University, and what the Architectural School has done for architecture. He found the school, when he first occupied the chair, to consist of some dozen students. When he left the number exceeded two hundred, and he had revolutionised the course of architectural education in this country. It is perhaps to be regretted that he did not enlarge on the various phases through which the school passed.

From the work of the Adam Brothers to the Neo-Grec, and then turning to America to the study of the work of McKim, Mead and White, and their contemporaries, with an occasional glance at France, he led his school through the various influences of contemporary design, until he left with the stage set with the scenery of the "modern renaissance"—to use his own words. He is generous in his acknowledgment of the help he received from his colleagues at Liverpool, both in the school and the University, and he provides some vivid pen-pictures of personalities.

Interspersed with his professional and academic activities he essayed to start and run a repertory theatre, to control the supply of munitions during the War, and to keep up a continuous output of articles and books. Truly an astonishing record.

He will be always something of a problem. Behind the somewhat formal façade produced by a public school and Cambridge was hidden the lively little Irish imp, which played such astounding tricks to the confusion and delight of friends and enemies alike.

This book is as interesting as any novel —in fact, a great deal more interesting than a good many.

His many friends and students (and the terms are synonymous) all over the world will give a warm welcome to this history of their hero's passage through the years.

* "Scaffolding in the Sky: A Semi-architectural Autobiography." By C. H. Reilly. London: George Routledge & Sons, Ltd. Price 12s. 6d. net.

LONDON BUILDING BY-LAWS—XXXIX

By ALFRED H. BARNES, F.R.I.B.A., M.I.Struct.E., and C. ROLAND WOODS, M.B.E., LL.B.

PART VIII.—MISCELLANEOUS (*continued*).

Flue Pipes to Geysers.

By-laws Nos. 135 and 136 relate to flue pipes which, as previously remarked, are regarded by the by-laws as other than chimneys.

The application of By-law No. 135 (with the exception of one clause relating to fenestral ventilation) is confined to flue pipes in connection with gas-heated geysers and similar appliances, the small appliances for rapid water heating to sinks and lavatory basins being specifically excluded. This by-law breaks new ground in London building legislation, there being no provision for flue pipes from geysers and the like in the previous building Acts or by-laws.

The first paragraph of this by-law has the distinction of containing a requirement rendering provision of a flue a legal necessity. It will be observed that elsewhere, although there are detailed requirements as to the size of flues and the materials and construction surrounding them, nowhere does a by-law say that for this or that purpose there shall be a flue. By-law No. 135 (1) requires that "a flue pipe shall be provided" to every geyser so constructed as to allow the products of combustion to flow away in normal weather.

Paragraph (2) immediately follows with a provision for abnormal weather conditions by requiring a suitable baffler capable of preventing interference with combustion. It is directed that such baffler, if not situated within the apparatus itself, must not be more than a foot distant therefrom.

Paragraph (3) of By-law No. 135 requires the flue pipe of a geyser to discharge either into a chimney flue or directly into the air, or, where this is impracticable, into the roof space, provided the roof space be freely ventilated.

Where the flue pipe discharges into a chimney flue, such chimney flue must not communicate with any other room than that containing the geyser, except as provided in By-law No. 132 (*j*) (*i*), where this is impracticable in the case of a pre-by-law chimney and where the approval of the district surveyor is obtained, in which case the flue of the geyser may be connected up with a chimney flue from the fire in another room. There is no objection, as provided in By-law 132 (2) (*j*) (*ii*) to the flue pipe from the geyser discharging into the chimney flue of a fire in the same room as the geyser.

Where the flue pipe discharges direct into the open air, it is required to be furnished with a suitable terminal or outside windguard.

Flue Pipes, Generally.

By-law No. 136 (1) relates to flue pipes.

Paragraph (1) (*a*) prohibits the employment of a flue pipe carried up through the building in lieu of a chimney, but the use of the flue pipe must be confined to the room in which is situated the apparatus to which it is attached. Paragraph (9) absolves from this prohibition gas flue pipes surrounded with not less than 3 in. of incombustible material (exclusive of plaster). This proviso as regards the thickness of the surrounding materials is more onerous than the requirement, in that respect, of By-law No. 134 (1), but, on the other hand, exercises no control on the area of the flue. An ordinary unencased flue pipe may, however, be carried through an external wall "direct to the open air." It is apparent that the meaning of "direct to the open air" is not to be taken as necessarily discharging at once into the open air without change in the direction of the pipe, since paragraph (2) of the same by-law (in words very similar to those of Section 71 (2) of the London Building Act, 1930) forbids the fixing of the pipe "against any building on the face adjoining any street or public way." It is apparent from this that the by-law contemplates the possibility of the pipe being turned up, after it emerges from the building and run up the wall as a "chimney pipe," as it is sometimes called outside the by-laws. The unenclosed flue pipe, not being a chimney within the meaning of the by-laws, does not come under the restrictions relating to chimneys as regards such matters as the 7½-in. minimum diameter and the 18-in. or 3-ft. minimum height above roof.

Paragraph (1) (*b*) of By-law No. 136 prescribes the materials of which a flue pipe shall be composed. For general purposes such pipes are required to be of cast iron conforming with the British Standard Specification No. 41—1908, or of mild steel plate not less than $\frac{1}{8}$-in. thick.

Relaxation from this requirement is provided in respect of pipes to gas-fired appliances and slow-combustion domestic stoves, etc. In the case of gas-fired appliances, pipes may be of asbestos-cement complying with the British Standard Specification No. 567—1934, and furthermore, where such appliance is a domestic cooking range, gas fire or geyser, the pipes may be of "sheet metal." Asbestos-cement "to the satisfaction of the district surveyor" is also permitted in the case of "a close slow-combustion domestic oven, copper, steam boiler or stove designed, constructed and used solely for the burning of anthracite or other solid smokeless fuel."

No provision is made for the use of fireclay or stoneware pipes, a fact which may reflect on the use of pipes of these materials for such purposes as extending existing flues where a higher building is erected in their immediate vicinity. One also naturally inquires whether this restriction with regard to the material of flue pipes will affect the customary use of clay chimney-pots, or whether it will be held that chimney-pots neither come within the category of flue pipes nor form part of the chimney, and are therefore uncontrolled. In any case, it is inconceivable that it is the intention of the by-law to prohibit the use of the traditional chimney-pot, and in the event of a district surveyor raising objection under the by-laws, there is always the refuge of the Council's powers of modification and waiver under Section 9 of the London Building Act (Amendment) Act, 1935.

Fire Precautions with Regard to Pipes.

Paragraphs (3) to (9) of By-law No. 136 prescribe the distance which (with certain exceptions) must be maintained between any combustible materials and pipes for conveying the products of combustion, hot air, steam or hot water. The requirements contained in these paragraphs are comparable with those in Subsections (3) to (6) of Section 71 of the London Building Act, 1930.

Section 71 of the Act exempted from its restrictions pipes for hot water or steam where a free blow-off was provided. The corresponding by-law, in making a similar exception, stipulates the condition in the case of steam pipes, that the pressure must not exceed 15 lb. per sq. in., and in the case of hot water pipes (alternatively to the requirement of a free blow-off) that the temperature of the water must not exceed 200 deg. F. The by-law further extends the exemption to pipes conveying the products of combustion from gas fires and gas-fired appliances where such pipes pass through a metal sleeve with an intervening packing of asbestos "or other suitable non-heat-conducting material." Another relaxation is the very obvious one that restriction of this sort does not apply to ventilating ducts conveying warm air. It is remarkable that prior to the making of the by-laws, the separation of 6 in. has prevailed since the Act of 1855, without exemption for warm air ducts.

Section 71 of the Act specified the following minima distances which were to intervene between pipes and any combustible material in respect of the purpose for which such pipes were employed:—

"Smoke and products of combustion," 9 in.; heated air or steam, 6 in.; hot water, 3 in.

With regard to the first, By-law No. 136 (3) still requires the 9 in. of separation, except in the case of a gas fire or gas-fired appliance, in which case the minimum distance between the pipe and any incombustible material is specified to be 4 in. The curious discrimination between "smoke" and the "products of combustion" has survived from 1855.

Paragraphs (4) and (5) renew the requirements of the Act (in regard to separation from incombustible material) of hot air or steam pipes and hot water pipes respectively.

Paragraph (6) extends the requirement of a 9-in. separation to "every pipe provided for collecting or carrying off any vapour or fumes from apparatus used in any fried fish or other cook-shop, eating house, restaurant, hotel, or any like premises for cooking food or for any purpose in connection therewith."

Such pipes, like those for conveying the more direct products of combustion, are required to consist of metal or asbestos-cement, but without specific requirements as to size of flue or thickness of material.

Paragraph (8) makes a new requirement in limiting to 4 in. the diameter of any external pipe coming within the provisions of By-law No. 136. The effect of this by-law is to permit the employment of an external pipe up to 4 in. in diameter without, as heretofore, necessitating an application to the Council under Part VII of the London Building Act, 1930, by reason of there being no applicable or appropriate rules.

(*To be continued.*)

L.C.C. Architect's Department: Retirement.

The current agenda of the London County Council makes reference to the impending retirement in January next of Mr. A. H. Barnes, F.R.I.B.A., M.I.Struct.E. The Establishments Committee state: "Mr. Barnes entered the service of the School Board for London in 1898. Since his transfer to the Council's service he has been engaged on both constructional and statutory duties. He rendered valuable service in connection with the preparation of the building by-laws made in pursuance of the London Building Act (Amendment) Act, 1935, which came into operation in January, 1938. He has rendered conscientious and zealous service to the Council."

MODERN BUILDING PRACTICE

II. THE STRUCTURAL ENGINEER'S PART.

By P. C. G. HAUSSER, M.Inst.C.E.

III.—THE GROWTH OF WELDING—

(*Concluded from page* 890, *November* 4).

WELDED structural steelwork for buildings has not as yet been used to any great extent in this country. On the Continent a considerable amount of work has been carried out. In Belgium a large number of road and railway bridges, mainly of Vierendeel type, have been built and are notable for their clean lines and æsthetic appearance. Several buildings have also been constructed, of which two—namely, the University Buildings at Liége and the Science Museum at Brussels—have already been mentioned.

In Germany welding work has so far mainly been used for the rigid type of construction, for assembly halls and railway station platforms, and is now being used on bridges. In Poland welding has been used on several multi-storey buildings, and particulars of some of these are given in a paper by Stefan Bryla, published for the International Congress for Steel Development, London, 1934.

Figure 10 is a photograph of Saale Station, Germany, and is representative of the use of welded portal frames in railway station work. The clean appearance and freedom from projections making for ease of painting and maintenance should be noted, together with the large glass area provided. This

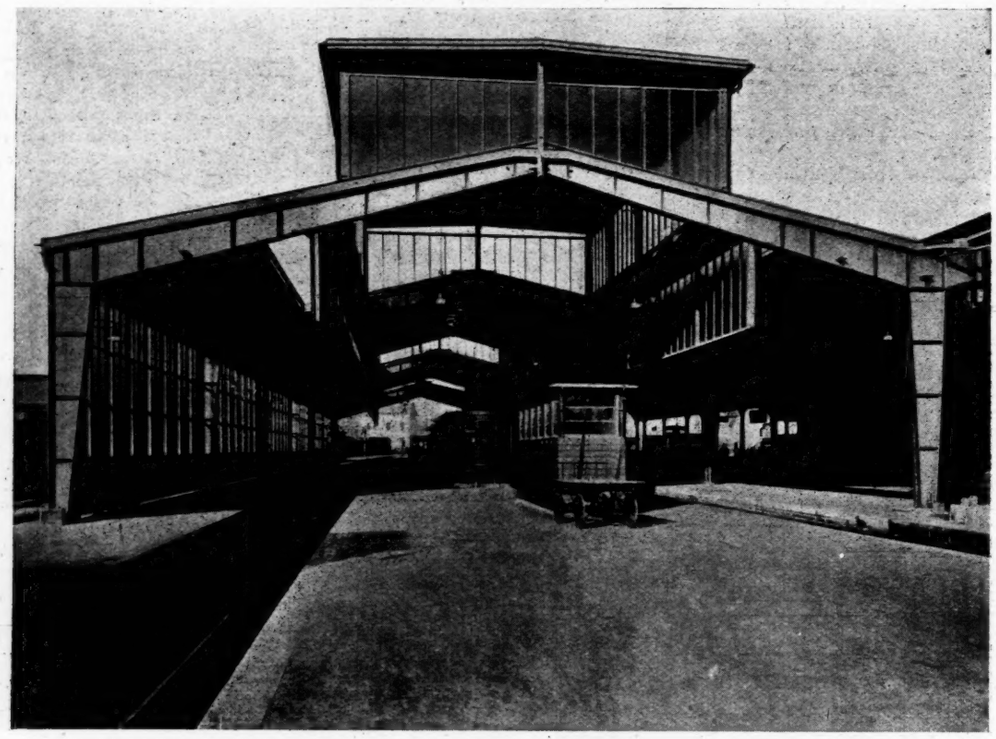


FIG. 10.—SAALE STATION, GERMANY. AN EXAMPLE OF THE USE OF THE WELDED PORTAL FRAME

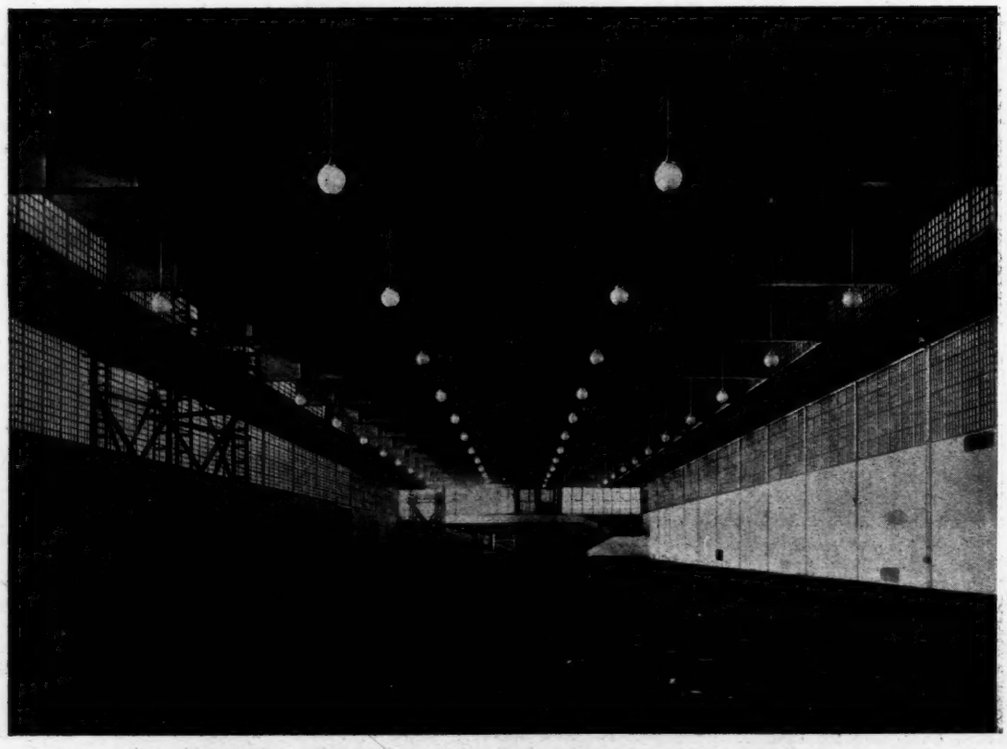
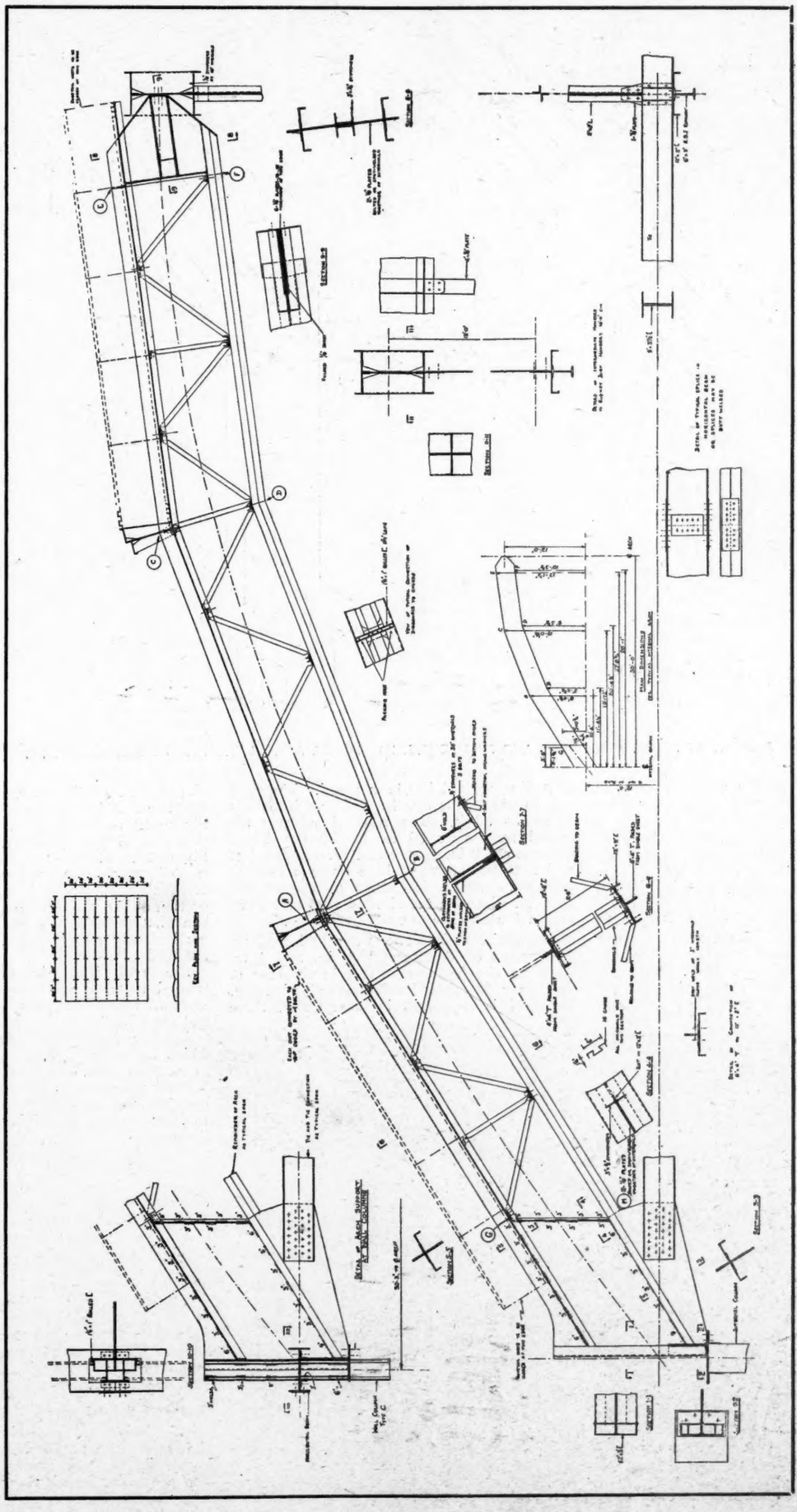


FIG. 11.—A CONTINENTAL BUILDING. AN EXAMPLE OF THE USE OF STRAIGHTFORWARD STEELWORK WITHOUT RIGID FRAMES.



"MODERN BUILDING PRACTICE." FIG. 12.—FACTORY AT HAYES. GENERAL ARRANGEMENT OF ROOF ARCHES.

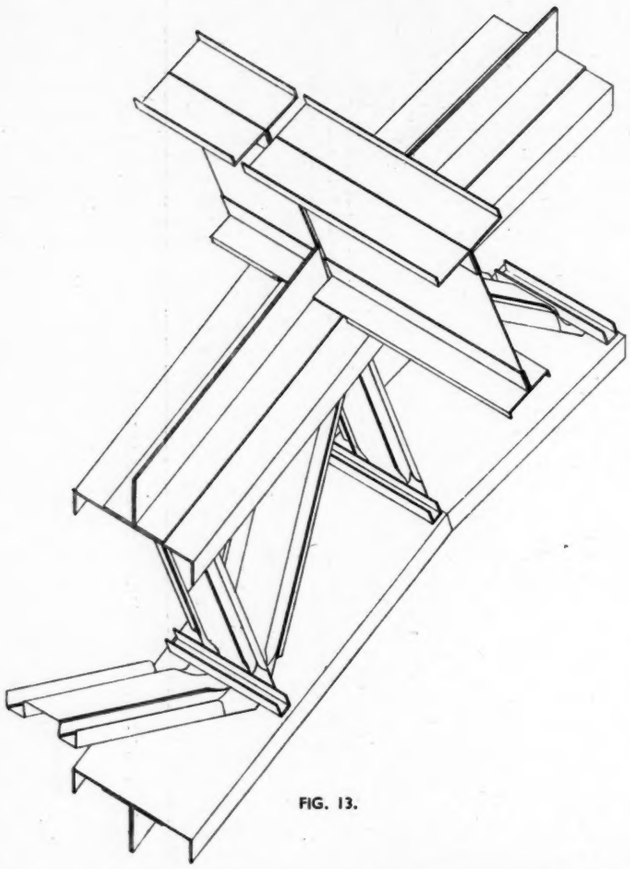


FIG. 13.

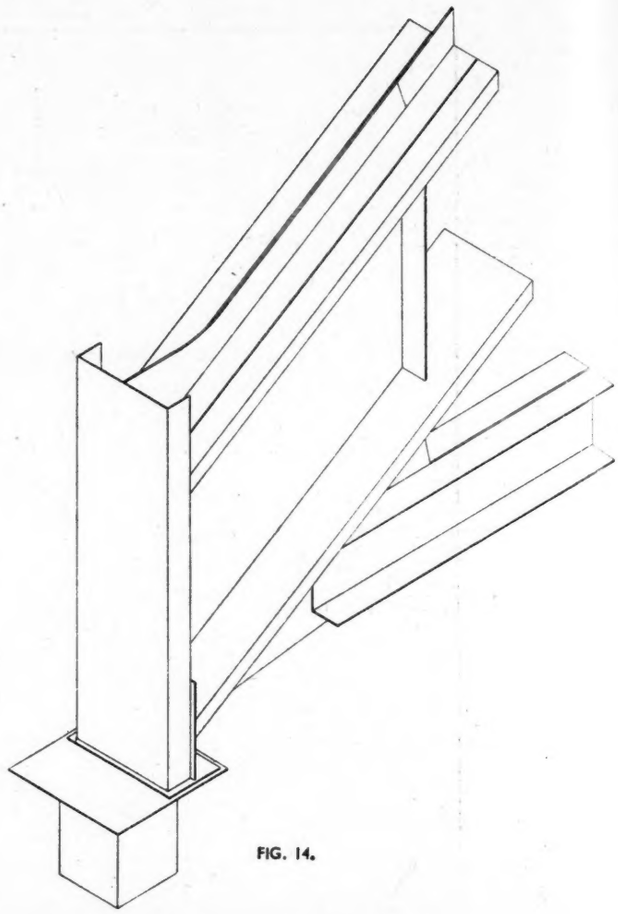


FIG. 14.

FACTORY AT HAYES. MAIN ARCH AND PURLINS (FIG. 13) LOWER ARTICULATION AND COLUMNS (FIG. 14).

latter is facilitated by the use of Vierendeel longitudinal girders for the external enclosures.

Figure 11 is another Continental example of a clean, light building with large areas of glass, obtained in this case by the use of straightforward steelwork without the use of rigid frames.

An interesting example which shows the use that can be made of sheet steel in this country is the recently constructed welded factory for Steel Ceilings, Ltd., at Hayes, in which it is stated that about 50 per cent. of the weight of structural steelwork normally required has been saved. The floor area is 240 ft. by 300 ft., split up into bays 60 ft. by 30 ft. The internal columns are spaced at centres 60 ft. by 30 ft. These columns are 8 in. square and are composed of $\frac{1}{16}$ in. metal arc-welded to form a square section reinforced internally at the corners by 1 in. diameter round steel rods and filled with vibrated concrete.

The entire framework, walls and roof are constructed of sheet metal $\frac{1}{16}$ in. and $\frac{1}{8}$ in. thick for the framework, and in the case of the latter 24-gauge Lewis dovetail sheeting. The roof is supported by a series of three pinned arches built up from sheet metal. A detail of this construction is shown in Figure 12, and an enlarged detail of the construction of the main arch and purlins in Figure 13. These are built up of $\frac{1}{8}$ in. plate welded together and stiffened with 16-gauge diagonals. Figure 14 is a detail of the connection at the truss to the column. Figure 15 is a photograph of the trusses and main ridge purlin. Figures 16 and 17 show details of the wall construction.

The roof itself is composed of steel trussed units on the Lewis dovetail parallel system, fabricated from 24 gauge material and spanning 30 ft. between the main trusses.

Another interesting form of construction which has only recently been used is known as stressed skin construction. In shipbuilding and aircraft practice the covering material has for long been used to carry stress, and to form part of the load-carrying portions of the structure. The principle is new, however, in steel building construction and seems to have great possibility of weight-saving and economy. An interesting example from Germany of stressed skin construction, in which the roof-covering material of $\frac{3}{16}$ in. plate is used to carry stress as part of the structure, is the Hünnebeck Hall. The general principle of the roof is that of an arch form with a series of compound corrugated arches. The span of the arch is 263 ft., the width of the hall 148 ft., and the height 46 ft. The thickness of plate used in the roof construction is $\frac{3}{16}$ in. This form of construction has been found to give a very light structure and to be economical in construction.

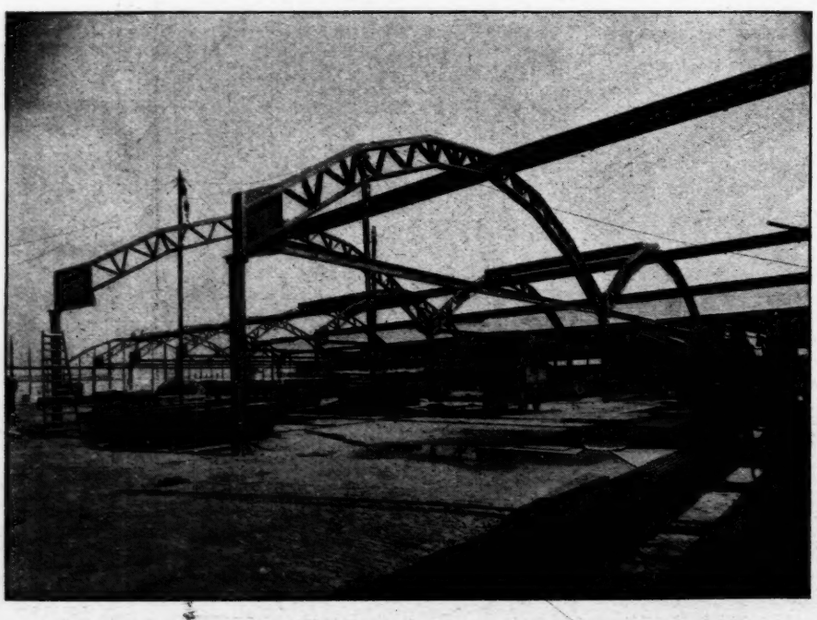


FIG. 15.—FACTORY AT HAYES. VIEW SHOWING TRUSSES AND MAIN RIDGE PURLINS.

Foundation Designs.

The design of foundations is still one of the structural problems about which comparatively little is known from an accurate analysis point of view. There are a great many variables, such as the different classes of soils, clays, etc., and the conditions of these materials are constantly changing, due to changes in moisture content, etc. This

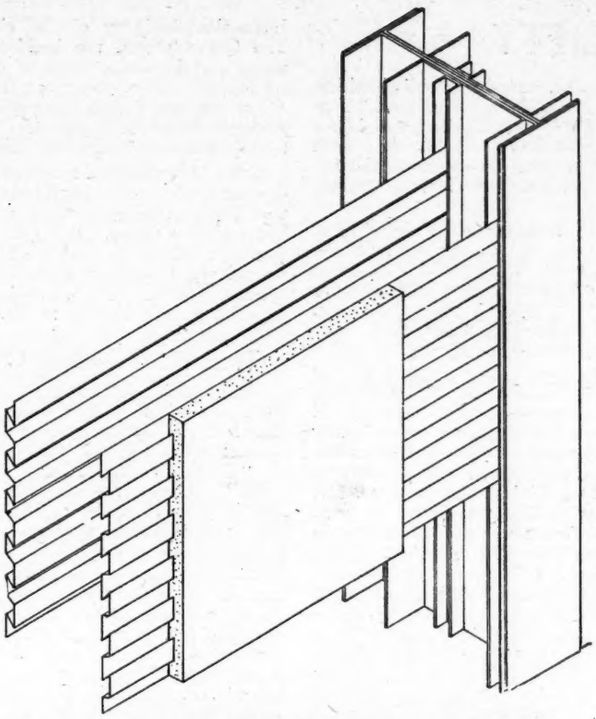


FIG. 16.—FACTORY AT HAYES. DETAIL OF WALL CONSTRUCTION.

makes it extremely difficult to obtain any reliable data of value to the practising engineer

A great deal of work is now being carried out on the subject of soil mechanics, principally in America, with a view to elucidating some of the problems mentioned above. The construction of foundations in the field has been assisted by the introduction in recent years of various methods of dealing with difficult site conditions. For example, in addition to the well-known methods of freezing by brine solutions and grouting of ground, there is now available a chemical consolidation process, which in effect converts the ground into a sort of weak concrete by the injection of chemicals. This latter is efficient in soils of a sandy nature, but is inapplicable to loamy soil or clay. It has certain advantages over the older methods, and is often very useful in dealing with difficult site conditions met with in building operations.

Another aid to construction in waterlogged ground is the system of lowering groundwater by means of either a shallow or deep well system. By this method and by use of suitable filters, it is possible to prevent any sand, etc., being withdrawn from the ground, and so to lower the ground-water and maintain it below the level at which excavation work has to be carried out without risk of damage to adjoining structures.

In describing the modern trend of building design I have confined myself mainly to steel construction, as it is felt it is in this direction that the most interesting modern developments are at present taking place. Reinforced concrete, which is a material that has come very much to the fore in modern building construction, is not dealt with here.

I wish to acknowledge my indebtedness to Mr. MacBride, of the Colville Construction Co., Ltd., for permission to reproduce details and particulars of the Welded Turbo Blower Building, to the British Steelwork Association for illustrations and particulars of the building work in progress abroad, and to the publishers of the "Welding Industry" for particulars of the new factory for Steel Ceilings, Ltd.

(*Concluded.*)

[Previous articles appeared in our issues for October 14 and November 4.]

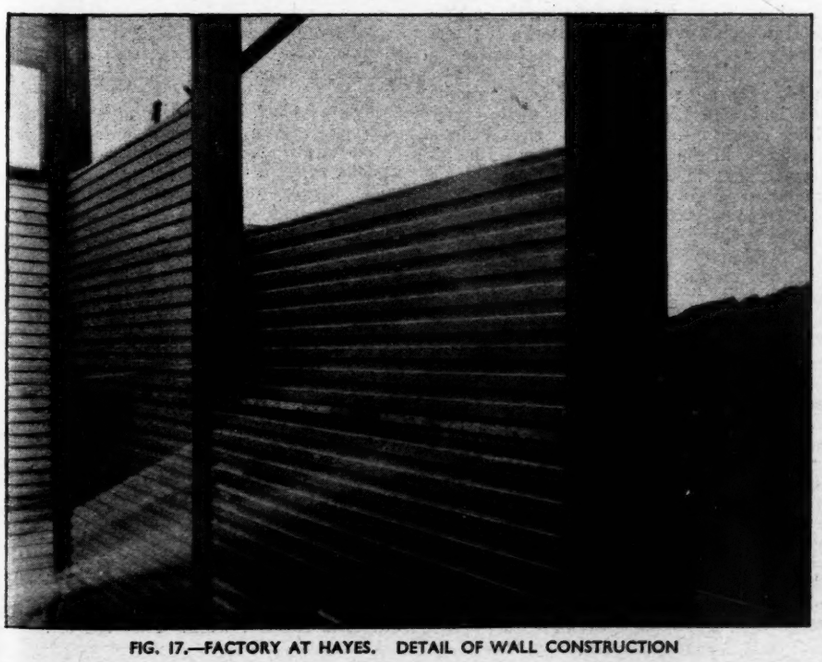


FIG. 17.—FACTORY AT HAYES. DETAIL OF WALL CONSTRUCTION

BUILDING STATISTICS

UNEMPLOYMENT FIGURES.

EMPLOYMENT during October, states the "Ministry of Labour Gazette," showed a further decline and was moderate on the whole. The decline, which occurred in all administrative divisions, affected all occupations except slaters and tilers, but was most marked in the painting and decorating branch of the industry. Compared with a year ago, there was an increase in the numbers unemployed among all classes of workers. At October 17, 168,011 insured men were unemployed, a percentage of 16.0. This was 1.9 per cent. worse than for September and 3.8 per cent. worse than for October, 1937.

Building Plans Approved.

Returns as to the estimated cost of buildings for which plans were approved during October have been received from 141 local authorities (representing towns with a population of 17,486,000 in 1931). The returns show that in October, 1938, plans were passed for buildings with an estimated cost of £8,239,200, this representing a decrease of 2.8 per cent. as compared with October, 1937, but an improvement of 18.8 per cent. over September last.

Analysis of classes of buildings for October, 1938, and October, 1937, is as follows :—

	1938. £	1937. £
Dwelling-houses... ...	4,592,600	5,363,200
Factories and Workshops	1,876,200	497,200
Shops, Offices, Warehouses and other business premises	685,200	835,200
Churches, Schools and public buildings ...	337,800	674,100
Other buildings and alterations	747,400	1,108,900
	£8,239,200	£8,478,600

Third Quarter of 1938.

Particulars are now available, for the whole of the 146 authorities covered, with regard to the estimated cost of buildings for which plans were passed during July to September, 1938. The following table summarises the figures, and compares, in percentage form, the totals with those for the third quarter of 1937 :—

District.	Totals; and Percentage Inc. (+) or Dec. (−). £	
ENGLAND AND WALES :—		
Northern Counties ...	1,325,200	(+ 32.6)
Yorkshire	3,417,600	(+ 27.3)
Lancs and Cheshire ...	2,845,700	(− 12.0)
North and West Midland	4,953,900	(− 9.5)
South-Midland and Eastern	1,001,300	(− 32.4)
Outer London	3,977,300	(− 28.7)
South-Eastern	1,996,600	(+ 4.4)
South-Western	778,900	(+ 22.5)
Wales and Mon. ...	540,200	(+ 2.9)
SCOTLAND	2,266,400	(− 10.4)
TOTALS :—		
July, 1938	9,615,600	
Aug., 1938	6,446,100	
Sept., 1938	7,041,400	
July-Sept., 1938 ...	23,103,100	(− 7.8)
July-Sept., 1937 ...	25,051,700	

For the first nine months of 1938 the corresponding total for all classes of buildings was £74,913,900, compared with £83,811,500 for the same period of 1937, representing a decrease of 10.6 per cent.

Number of Dwelling-houses.

The number of dwellings for which plans were approved by the 146 local authorities in the third quarter of 1938 was 27,644, as compared with 29,971 in the third quarter of 1937. For September alone the numbers were 8,851 in 1938 and 10,523 in 1937.

THE LONDON SOCIETY

"WREN'S LONDON AND OURS."

SOME interesting comparisons between the architecture of London in the time of Wren and of the present day were drawn by Mr. R. P. Jones, M.A., F.R.I.B.A., on Friday, when he addressed a meeting of the London Society at the Royal Society of Arts, W.C. Mr. G. A. Jellicoe, F.R.I.B.A., presided.

MR. JONES began by saying that if any persons had come to the meeting in the hope of hearing Wren "debunked," in the modern phrase, now was their chance to leave, for he proposed to maintain the position that in his own time, and in relation to what had gone before him, Wren was as revolutionary a modernist and functionalist as any Corbusier or Mendelsohn or Cachemaille-Day in our own time, and in most of his buildings he gave first consideration to that "Fitness for Purpose" which was claimed to be the special virtue of post-war architecture.

Many people thought of Wren as choosing to design in a foreign style based on a past civilisation, just as the various revival architects did in the nineteenth century; but his case was entirely different from theirs.

The speaker went on to say that it was, perhaps, fortunate for his originality that Wren never got to Italy, but he paid a visit to Paris not long after he had taken up architecture as a side-line to his accomplishment as a brilliant all-round scientist, so that he acquired a fairly French accent at first, but gradually formed his own characteristic English dialect, though all the time he was speaking the universal European language, and the only one in which an architect could then express himself.

He acquired his powers of design by direct contact with the work he saw in Paris; by indirect contact with Italy through the engravings and books illustrating Italian work which were in general circulation, and even more from his own experience as he went along, in grappling with the enormous amount and variety of building which was loaded on to him through the Great Fire, one of the most perfectly timed catastrophes in the history of architecture.

Except for schemes dealing with Old St. Paul's, Wren's London work began after the Fire and ended 56 years later, when he designed the tower of St. Michael's, Cornhill, at the age of ninety.

With the aid of a number of lantern slides the speaker showed typical examples of Wren's buildings in London, and compared them with buildings of the same kind which have been erected since the seventeenth and early eighteenth centuries.

Temple Bar, erected in 1672, six years after the Fire, was an example of how Wren experimented in design as he went along. For this structure he got his inspiration from the Bridge of Sighs, Venice. Temple Bar was not a copy of the Bridge, but the similarity was so near that there could be no doubt that Wren did derive his inspiration from that source.

The Monument, inspired by the column of Trajan, marked the spot where the Fire started. Wren was the first man to erect in England a column, standing by itself, as a monument. There were some fine examples of sculpture at the base, and in its original form, without the high buildings which at the present day surrounded it, the Monument must have been very imposing.

In accordance with the regulations imposed after the Fire, the general street design of Wren's London showed buildings consisting of a ground and three upper floors. Despite the roofs being of the same height there was an extraordinary variety of effect.

The Middle Temple Gateway, erected in 1685, showed the progress made since Temple Bar; it was a beautiful piece of design, very flat in projection so that the perspective was not destroyed, and almost devoid of any kind of ornament.

"The supreme examples of Wren's instincts of functionalism and fitness for purpose," continued the speaker, "were to be found in his City churches. Fifty-one churches had been burned in the Fire, and he was given the job of reconstructing all as soon and as cheaply as possible."

Wren had also to redesign the churches as preaching auditoria, in accordance with the change in the service, as the Gothic churches provided for nothing of that kind, either in form or design. St. Bride's, Fleet-street, was an example of the complete break made with the past. But if it was unlike that to which people were accustomed, how much more was a change brought about by St. Stephen's, Walbrook, which was not like a church at all in the old sense, being purely a preaching auditorium? More recent examples were the churches of the modernists, a typical example being a church at Eltham designed by Mr. Cachemaille-Day, which was not nearly so different from Wren's churches as were Wren's churches from the Gothic churches that went before.

Wren's first design of St. Paul's was a preaching cathedral, with an enormous central place under the dome for preaching, a short nave, and transept and chancel, and a vestibule leading to the portico. It was turned down because the people of that time thought it was so different from what they considered to be like a cathedral, and Wren was compelled to go back to a Gothic plan, translated into Italian Renaissance. St. Paul's stood alone, there was nothing like it at the present day, but if a parallel was needed it was the London University building, a cathedral of learning. It was the exact shape of Liverpool Cathedral, with huge central tower. It was a good example of bareness and Spartan simplicity.

The speaker then went on to illustrate and describe three of Wren's secular works—Chelsea Hospital, Hampton Court Palace, and Greenwich Hospital. Chelsea Hospital was an entirely domestic building—no groups of carved armour and no indication of its military purpose. The plan was similar to the college quadrangle, with the south side left open to allow for sunshine and fresh air. The "fitness for purpose" came out in the small colonnades which served as sun terraces.

The nearest parallel to Chelsea Hospital was a modern block of flats, of which Dolphin-square was an example. In this block of flats the fourth side had not been left out, but it had a central block and sun terraces.

The speaker went on to say he thought that when Wren was commissioned to produce Hampton Court he had not the slightest doubt in his mind that what he had to do was to pull down the Tudor Palace and rebuild. By an accident of fate, however, Wren had completed one-third of the new building when Queen Mary died and William lost interest in the place, and no more building was done. The result was really like a Gothic cathedral with all sorts of periods mixed up together. Wren's scheme proposed to preserve the great hall, for which he had a great admiration, take down the Wolsey Palace and on the north design a three-sided quadrangle, leaving the hall as the centre of the whole scheme.

The final and second finest building of Wren's, after St. Paul's Cathedral was Greenwich Hospital. When he was commissioned to do the job, Wren found the Queen's House, designed by Inigo Jones, on the site. There was also, on the bank, a large block of buildings designed for Charles II. Wren was instructed to keep those buildings and somehow work them into the scheme of a three-sided quadrangle. The first thing he did was to repeat the buildings designed for Charles II on the other side, which gave him two front wings on the river bank. Then he had the main block to arrange, and a central entrance with portico Here the obstinacy of the client came in. The Queen vetoed the building because she wished, at all costs, to preserve direct access to and a view of the river from her house. Wren got round that by a great example of his genius; he cut the main block in two and repeated the dome on both sides of the gap.

A modern parallel to Greenwich was the County Hall, which resembled Greenwich in that the central feature was not a projection but rather a recess. It tried to combine the domestic effect of Chelsea with the monumental effect of Greenwich.

Mr. Maurice Webb, M.A., F.R.I.B.A., moved a vote of thanks to Mr. Jones.

THE PLANNING OF FLATS

THE planning of flats, whether for municipal use or for private enterprise, is a subject which to-day keenly interests the majority of architects. For that reason the appearance of "Flats—Municipal and Private Enterprise" * requires no further excuse, the more especially as it is one of the most thorough and comprehensive analyses of the subject that has come to our notice.

The early part of the book is devoted to a number of articles by architects and authorities on varying aspects of the subject. For example, Mr. Eric Bird writes on the structural aspects of Air Raid Precautions; Mr. Hope Bagenal on Planning Against Noise, and Mr. S. G. Jenkins on Radio Reception. There are also articles by Mr. Howard Robertson, Mr. Wells Coates, Mr. Louis de Soissons, Mr. F. R. Yerbury, Mr. S. C. Leslie, and Miss Elizabeth Denby.

The main part of the book contains photographs, plans and details of recently built flats with detailed plans, sections and views of the kitchens which are supplied with instantaneus hot water by means of "Ascot" gas water-heating equipment. Kensal House, by Mr. Maxwell Fry, in collaboration with Messrs. Robert Atkinson, C. H. James, Grey Wornum, and Miss Elizabeth Denby, and a block of flats in Stockholm, are two outstanding examples. In these—as in all the 32 buildings illustrated—there is detailed information showing the position of the water-heater, its relation to kitchen and bathroom, and the arrangement of water supplies and flues. This is well illustrated by the kitchen in a block of flats at Stroud Green, showing the neat appearance of an "Ascot" heater in a modern kitchen. These illustrations and the text by Messrs. J. K. Winser and Edward Armstrong, F.R.I.B.A., give the information that architects find of use when planning for the installation of gas water heaters, such as types of flue required, capacities of various types of heaters, water service connections, gas services, etc. There are notes also on the use of these heaters as an alternative to solid fuel boilers in the summer months, with diagrams showing the method of connecting the heater to the system.

The technical information collected at the end of the book includes clearly dimensioned detail drawings and specifications of the various types of heaters—single-point, multi-point, boiling water heater, etc.

The production of the book is excellent, and the consistent method of presentation of photographs, reproductions and diagrams, and the thoroughness with which the subject is treated throughout, make the volume a valuable contribution to the subject.

Flats and Hot Water Supply.

An enjoyable party was given at the Ritz Hotel on Friday last by Ascot Gas Water Heaters, Ltd., for the purpose of drawing attention to a new book, "Flats—Municipal and Private Enterprise," published by the company for the purpose of linking up the planning of flats with the provision of domestic hot water by instantaneous gas water heaters. The book is reviewed on this page. Nearly 500 guests were received by Dr. B. Friedman (managing director).

* Published by Ascot Gas Water Heaters, Ltd., 244, High Holborn, W.C.1. Price 25s. net.

THE THERMAL INSULATION OF BUILDINGS

NOTES FROM THE INFORMATION BUREAU OF THE BUILDING RESEARCH STATION.*

PART II.—PRACTICE.

In Part I of this Note reference was made to the importance of thermal insulation, not only from the point of view of preventing undue heat loss, but also in avoiding condensation, pattern staining and cracking due to thermal movements. (See *The Builder*, November 4.)

The question arises: How much insulation is needed to meet these different requirements? Data on the subject are not as complete and precise as they might be. Doubtless this is largely due to the fact that though increasing attention is now being given to insulation problems, it has not been the practice to consider the provision of insulation in that degree of detail. Broadly speaking, it might almost be said that the practice has been to take it for granted that a building which satisfies the fundamental requirements of strength and stability, rain exclusion, etc., will automatically satisfy insulation requirements to a sufficient degree. It is desirable, however, that the question put above should be faced.

The subject is therefore discussed, in the light of available data and experience, in the following paragraphs and suggestions made as to the requirements. It will be appreciated that space will not permit more than an indication of general considerations, coupled here and there with some illustrative example. It would go outside the scope of the present note to discuss at any length the relative merits of different materials and forms of insulating construction.

Before proceeding to consider the separate requirements, starting with those of the avoidance of thermal movement, it may be noted that the requirements for the different purposes are not necessarily additive.

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The Reduction of Thermal Movement.

Thermal movement in a building sufficient to cause damage is usually due to solar radiation. Consequently, roofs are more liable to it than walls. A flat roof, for example, is more nearly normal to the sun's rays when they are most powerful than any other part of the structure. However, it is only extensive and continuous roofs, such as large areas of monolithic concrete, with which the thermal movement is likely to be sufficient to cause damage and for which therefore protection is required.

Protection can be provided by the use of a layer of material of high, or relatively high, thermal resistivity. Obviously, to be effective it must be placed outside the main roof structure. Available materials of high resistivity, *e.g.*, cork-board, fibre-board, cannot in general be placed right on the outside of the roof, since usually they require to be protected from dampness, which reduces both their life and their efficiency as thermal insulators. In terms of the familiar example of the concrete flat roof, with its necessary waterproof membrane of, say, asphalt mastic, this means that the cork or other material should be placed immediately under the asphalt. Materials such as gravel, concrete paving tiles which are not affected by dampness and which, therefore, can be placed on the outer surface, usually have a low resistivity and, therefore, require to be provided in relatively thick layers. So far as such materials are concerned, their thermal capacity matters more than their thermal resistance. The practical distinction between a layer of high capacity and one of high resistance is that the layer of higher capacity takes a longer time to heat up and, therefore, helps to produce a sufficient time-lag to avoid the effects of the sun when it is at its hottest.

Any insulation provided to reduce thermal movement will, of course, add to the thermal insulation of the structure and help to reduce condensation, pattern staining, and heat loss, which are discussed later. In general, however, thermal insulation for these purposes is most advantageously placed on the internal face of the shell of the building. This would seem to imply providing an insulating layer both outside and inside, but actually the effect of the insulating layer on the outside can be achieved by some white surface treatment which will serve to reflect the sun's rays and prevent in that way the heating up of the fabric by solar radiation. For example, it has been found that a covering of whitewash on ¼-in. asphalt laid on a 4-in. concrete slab is as effective against thermal movement as a 2 in. thickness of cork under the asphalt. The protection afforded by a coating of whitewash represents, for practical purposes, the highest that can be obtained by reflection. The question arises whether this is enough. Very little precise information is available in this direction, but experience suggests that protection equivalent to that afforded by a highly reflective surface such as whitewash or 2 in. or even 1 in. of cork (which is only a little less effective than whitewash) should be sufficient in any structure which is less than 100 ft. in any direction.

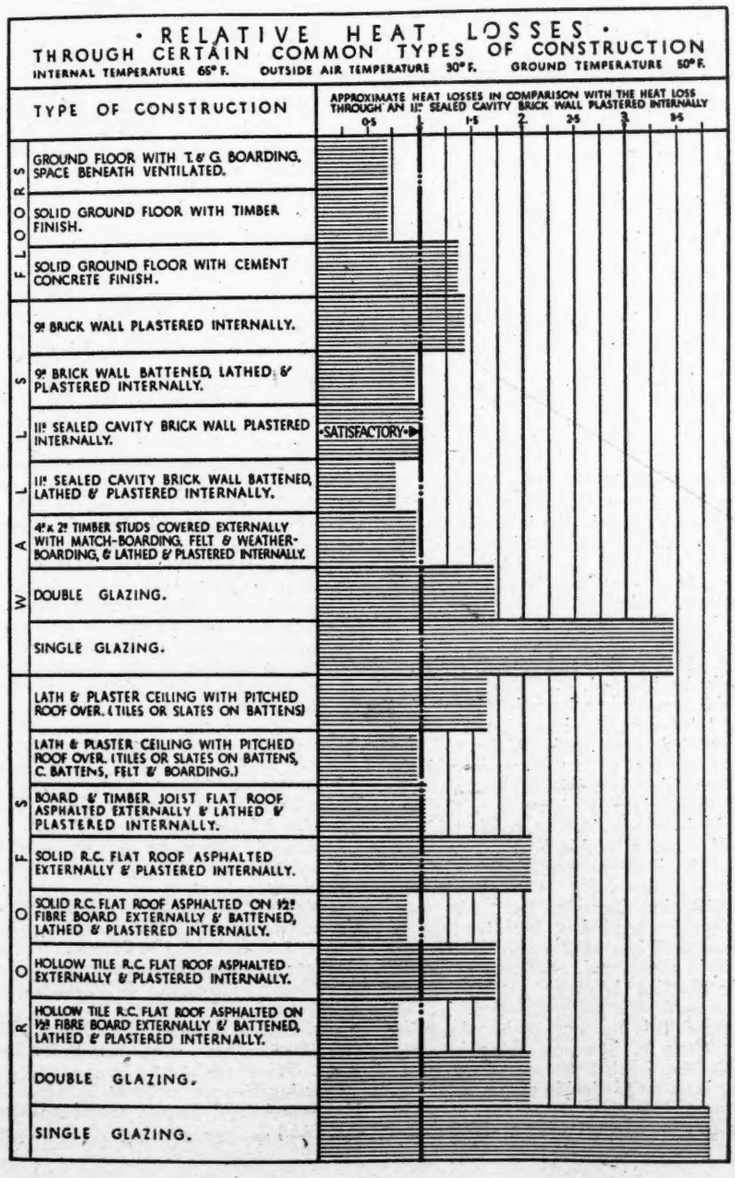
In a previous note in this series, it was stated that the provision of insulation equivalent to that of a white surface treatment is quite uneconomical. It has been pointed out, rightly, that this is not true in terms of whitewash and 1 in. of cork which, for this purpose, is nearly as effective as 2 in., when the cost of periodical renewal of whitewash is balanced against the initial cost of the cork. There are other factors which might enter in deciding between a white surface treatment and an insulating layer in particular cases, though they are probably not of sufficient importance to warrant any qualification, for general purposes, of the broad statement as to the practical equivalence, as regards performance, of whitewash and a cork layer 2 in. or even 1 in. thick.

Where a greater margin of safety is required than that given by whitewash or the cork or where a dimension of the structure exceeds 100 ft., both forms of insulation might be combined, by the use of a light-coloured surface in conjunction with cork-board or fibre-board. In very large buildings even this protection will probably not suffice; in this case it will be necessary to divide the building into areas of moderate size by suitably designed expansion joints.

The Reduction of Condensation.

(1) Windows.

Because of the high conductance of glass it is impossible to prevent condensation from occurring on single glazed windows unless special steps are taken by suitable heating and ventilation. With double glazing, the position would be different in view of the extra thermal insulation thus provided. Double glazing, however, is rarely considered justified from the point of view of the reduction of condensation alone, since windows, unlike the rest of the interior surfaces of a building, are unharmed by condensation.


• RELATIVE HEAT LOSSES •
THROUGH CERTAIN COMMON TYPES OF CONSTRUCTION
INTERNAL TEMPERATURE 65° F. OUTSIDE AIR TEMPERATURE 30° F. GROUND TEMPERATURE 50° F.
TYPE OF CONSTRUCTION
APPROXIMATE HEAT LOSSES IN COMPARISON WITH THE HEAT LOSS THROUGH AN 11" SEALED CAVITY BRICK WALL PLASTERED INTERNALLY
0·5
1
1·5
2
2·5
3
3·5
FLOORS
GROUND FLOOR WITH T. & G. BOARDING. SPACE BENEATH VENTILATED.
SOLID GROUND FLOOR WITH TIMBER FINISH.
SOLID GROUND FLOOR WITH CEMENT CONCRETE FINISH.
WALLS
9" BRICK WALL PLASTERED INTERNALLY.
9" BRICK WALL BATTENED, LATHED & PLASTERED INTERNALLY.
11" SEALED CAVITY BRICK WALL PLASTERED INTERNALLY.
SATISFACTORY
11" SEALED CAVITY BRICK WALL BATTENED, LATHED & PLASTERED INTERNALLY.
4" x 2" TIMBER STUDS COVERED EXTERNALLY WITH MATCH-BOARDING, FELT & WEATHER-BOARDING, & LATHED & PLASTERED INTERNALLY.
DOUBLE GLAZING.
SINGLE GLAZING.
ROOFS
LATH & PLASTER CEILING WITH PITCHED ROOF OVER. (TILES OR SLATES ON BATTENS)
LATH & PLASTER CEILING WITH PITCHED ROOF OVER. (TILES OR SLATES ON BATTENS, C. BATTENS, FELT & BOARDING.)
BOARD & TIMBER JOIST FLAT ROOF ASPHALTED EXTERNALLY & LATHED & PLASTERED INTERNALLY.
SOLID R.C. FLAT ROOF ASPHALTED EXTERNALLY & PLASTERED INTERNALLY.
SOLID R.C. FLAT ROOF ASPHALTED ON ½" FIBRE BOARD EXTERNALLY & BATTENED, LATHED & PLASTERED INTERNALLY.
HOLLOW TILE R.C. FLAT ROOF ASPHALTED EXTERNALLY & PLASTERED INTERNALLY.
HOLLOW TILE R.C. FLAT ROOF ASPHALTED ON ½" FIBRE BOARD EXTERNALLY & BATTENED, LATHED & PLASTERED INTERNALLY.
DOUBLE GLAZING.
SINGLE GLAZING.

(2) Walls, Ceilings, etc.

Condensation on the remaining internal surfaces of a building cannot, however, be ignored, particularly as regards walls and ceilings, since the decoration usual on these surfaces is easily harmed by dampness.

Condensation occurs on a wall or other surface when the heat loss to it is sufficient to lower the temperature of the air in contact with it below the dew point. This heat loss can be reduced, with a corresponding reduction in the risk of condensation, by thermal insulation. The nearer this thermal insulation is placed to the inner surface, the less will be the risk of condensation in the building, for, if it is set back, the thermal capacity of that part of the wall which lies between the insulation and the inner surface may be such that its response to fluctuations of temperature is so slow as again to bring a risk of condensation.

Some condensation at times is, of course, almost inevitable where efficient heating and ventilation are not provided, but even where the heating and ventilation are good, it would appear that an amount of thermal insulation at least equal to that provided by an 11-in. sealed cavity wall,* plastered internally, is usually necessary to prevent trouble due to condensation. Experience suggests that under the same conditions a solid wall by itself does not provide complete insurance against condensation, either because of its high thermal conductance when it is not very thick, or its high thermal capacity when it is very thick.

For the improvement of the insulation provided by a solid wall it can be lined internally with a light-weight and insulating material such as wood panelling or fibre-board, or with plaster on either laths or plaster-board fixed to timber battens plugged to the wall. In addition to the insulation value of this lining, the air space between the battens and the wall face contributes markedly to the insulation value of the construction. An alternative method is to line the wall with, say, 1 in. of cork-board or fibre-board fixed directly to the wall face.

The experience of the Station in dealing with practical cases suggests that the provision of a wall having an air-to-air transmission coefficient of 0.3 B.Th.U./hr./sq. ft./deg. F. difference in air temperature is necessary to reduce risk of condensation to a reasonable level. This insulation is provided by an 11-in. cavity wall or a 9-in. solid wall lined in the above manner.

Similar thermal insulation should be adopted in the case of roofs. A well-built pitched roof with a ceiling beneath usually provides thermal insulation at least equal to that mentioned above. This, however, is rarely the case where a flat roof is concerned—especially where the roof is constructed of concrete. A roof of this nature should be lined on the underside in the same manner as described for walls.

The Reduction of Pattern Staining.

Pattern staining is due to temperature differences over the surface of a non-homogeneous structure as the result of differences in the thermal conductivity of the parts of the structure. It can be prevented by introducing such an amount of thermal insulation on the inside as will sufficiently reduce these temperature differences. The amount required and the manner in which it is applied will, of course, depend upon the circumstances of the case. Broadly speaking, it is probably true to say that the provision of insulation adequate to reduce condensation will largely obviate pattern staining.

Pattern staining and recommendations for the use of thermal insulation to prevent it are dealt with at length in Building Research Bulletin No. 10—"The Prevention of Pattern Staining of Plasters" (London, 1931, H.M. Stationery Office, price 4d. net).

* NOTE.—In Part I. of the Note a value was given for the thermal resistance of a 2-in. air space in terms of "per inch of thickness." This was done for purposes of convenience and applies only to the thickness mentioned.

The Reduction of Heat Loss.

One of the objects of a building is to provide for comfortable temperature conditions inside irrespective of weather conditions outside, and this in the most economical manner possible. This means providing at the minimum of cost for coolness in summer and warmth in winter. In this country the latter is, of course, the principal concern. It remains, therefore, to consider the question of reducing heat losses through the structure.

It has already been noted that any structure which is designed to satisfy the requirements of structural stability, rain exclusion, etc., must of necessity provide some thermal insulation; further, that in order to prevent or reduce condensation, pattern staining, and, perhaps, thermal movement, the thermal insulation of the shell of a building must be of a certain standard.

The question of what extra insulation, if any, is introduced to reduce heat losses is largely a matter of balancing costs—the cost of the thermal insulation being weighed against the anticipated saving in heating costs. At first sight, since the cost of any extra thermal insulation is a non-recurring and usually not very high charge on the building, it would appear that a great increase in the thermal insulation of a building can easily be justified. Actually, however, added insulation to the walls, floors, etc., however great, would only go a certain way towards reducing heat losses. Calculation for a room which was by no means exceptional showed that the heat losses from the room on a particular day were as to 25 per cent. represented by heat lost through the windows, as to 39 per cent. by heat lost in warmed air leaving the room through the flue, etc., and replaced by cold air, and only as to the remaining 36 per cent. heat lost through the walls, floor and ceiling. It would therefore be irrational to push to an extreme extent the provision of insulation for the walls, etc. Attention should be paid to all three causes of heat loss. Short of double glazing, there is, of course, a strict limit to what can be done in reducing heat losses through windows without unduly sacrificing daylighting. Similarly, some loss of heat through the escape of warmed air must be faced in the interests of ventilation; but anything that is done to reduce discomfort from draughts will at the same time help to reduce heat losses. Further, air-infiltration through open joints in boarded ground floors with the usual ventilated air space underneath, which is a common cause of unnecessary heat loss, can be prevented by the use of tongued and grooved boarding without sacrifice of necessary ventilation.

Due account should therefore be taken of inevitable heat losses through windows and escape of warmed air, in the interests respectively of daylighting and ventilation, in considering the extent of the insulation of the walls, etc., to reduce heat losses. It is, in fact, doubtful whether, in general, any thermal insulation over and above that required for the purpose of avoiding thermal movement, condensation and pattern staining, will usually be justified.

It should nevertheless be pointed out that insulation to prevent heat losses is not entirely a matter of balancing costs. Take the case of two rooms, one with thin walls and the other with thick. It might at first sight be supposed that, given a bigger fire, the first room could be made just as comfortable as the second. Actually this is not necessarily the case. The inner surface of the thin wall will be colder than that of the thick one, so that, with the bigger fire but colder wall, the temperature conditions will tend to be less uniform and less comfortable in the first room than in the second. Differences in conditions in practice, however, are not usually such as to make this point of serious importance, though it is not one to be altogether ignored. There is, however, the point mentioned in Part I, that the provision of an insulating layer on the inside of the walls does make a great difference to the rate at which the room can be warmed with a given source of heat—a point of especial importance in connection with intermittent heating.

In the diagram on page 1037 the insulation values of certain common types of construction are compared with that of an 11-in. cavity wall plastered internally, which, as indicated, is considered to provide a satisfactory standard of thermal insulation for ordinary purposes.

Further information on the thermal insulation of buildings will be found in "Principles of Modern Building, Volume I—Walls, Partitions and Chimneys" (London, 1938, H.M. Stationery Office, price 10s. 6d. net.)

SCHOOL NEWS

CITY AND GUILDS OF LONDON ART SCHOOL.

The City and Guilds of London Art School offers particularly good facilities to architects and architectural students who wish to gain some practical knowledge of, and do studies in, modelling, carving, sculpture, lettering, etching, and decorative painting. Special stress is laid on the relation of these to buildings, and on the just application of ornament to modern structure. The school is freely run, and students are encouraged to pursue their individual studies. Every evening of the week, for instance, there is instruction in modelling, sculpture and painting from 6.30 to 9.30, and again on Saturdays from 10.30 a.m. to 5 p.m. There are also life classes daily from 10 a.m. to 3.30 p.m., and the studios are always open for people who can come in the daytime. A number of prizes and travelling scholarships are given for work of real merit. The fees are almost nominal: 10s. a term entitles a student to attend all the evening and Saturday classes.

Further information may be obtained from the Registrar, 124, Kennington Park-road, S.E.11.

HAMMERSMITH SCHOOL OF BUILDING AND ARTS AND CRAFTS.

A programme of lectures has been arranged for this school as follows:—Wednesday, December 14, Safety During Building Operations, by Mr. Harold Eccles, M.C., H.M. Inspector of Factories; Tuesday, January 17, Manufacture of Copper Tubes and Fittings, by Yorkshire Copper Works, Ltd.; Wednesday, January 25, Lettering and Calligraphy, by Mr. Alfred Fairbank; Friday, February 17, Manufacture of Glass and its Decorative Uses, by Messrs. Pilkington Bros., Ltd.

BOOK REVIEW

Furnishing the Small House. By MARGARET MERIVALE. (London: The Studio, Ltd., 44, Leicester-square, W.C.2.) Price 6s. net.

The owner of a small home has a difficult task in its furnishing owing to the restriction of space, and this book is intended to help to solve some of the problems with which the small home-owner is confronted, and to offer suggestions on the choice of furniture and accessories. Over 170 illustrations, carefully selected, show how great a part simplicity can play in the effective decoration of the modern home. Notes on suitable colour schemes and furniture materials are also included.

BOOKS RECEIVED

Estimates and Costs of Construction. By Frank Whitworth Stubbs, Jr. (London: Chapman & Hall, Ltd.) Price 15s. net.

Structural Design. By Hale Sutherland, A.B., S.B. (London: Chapman & Hall, Ltd.) Price 22s. 6d. net.

Design of Steel Buildings. (2nd Edition.) By Harold Dana Hauf, M.S. (London: Chapman & Hall, Ltd.). Price 13s. 6d. net.

History of Spanish Architecture. By Bernard Bevan. (London: B. T. Batsford, Ltd.). Price 21s. net.

The English Cottage. By Harry Batsford and Charles Fry. (London: B. T. Batsford, Ltd.). Price 7s. 6d. net.

Housing Finance in Great Britain. By H. C. Heales and C. H. Kirby. (London: Franey & Co., Ltd.)

THE CONTRACTOR'S OBLIGATIONS AND LIABILITIES—VII

By W. T. CRESWELL, K.C., Hon.A.R.I.B.A., A.S.I., etc., assisted by NORMAN P. GREIG, B.A., Barrister-at-Law.

SETTING OUT THE BUILDING.

In most formal contracts (for instance, the 1931 R.I.B.A. Form of Building Contract, clause 5) provision is made for the setting out of the proposed building or engineering works as a term of the contract itself, hence no trouble should ordinarily arise as to the obligation placed upon the architect (as the agent of the employer) and the contractor, with regard to their duties as to the setting out of the works, under this Form of Contract. It should be mentioned, however, that the "setting-out clause" of the 1931 Form was one of those subjected to much criticism before the Form was finally fixed. Clause 5 of the 1931 Form places a liability upon the architect under the contract (and who is definitely named in the contract) to furnish to the contractor either by way of *carefully dimensioned drawings or by personal supervision* at the time of setting out the works, such information as shall enable the contractor to set out the enclosing walls of the building at ground level. That done, the contractor shoulders the further responsibility and is, at his own cost, made liable to amend any errors from his own inaccurate setting out, unless the architect otherwise decides. It is clear, then, that close collaboration is necessary between architect and contractor under this Form of Contract with regard to setting out, and the former, apparently, can decide whether or not the contractor is to suffer from the results of his (the contractor's) own inaccuracy. In the case of serious inaccuracies involving considerable expense the matter is of some importance, for should the architect decide in favour of the contractor, the cost of amending errors made by him, and which are due to his inaccurate setting out of the works, would have to be borne by the employer.

The decision of the architect, however, is not final, this not being a matter within his sole discretion. If the decision is unacceptable to the contractor, and is disputed by him, then a "dispute or difference" will have arisen which is reviewable by arbitration.

It should further be noted in regard to clause 5 that there are two alternatives open to the architect, viz., the provision of carefully dimensioned drawings or the giving of personal supervision. It would be well, however, for the contractor, in the light of his subsequent liability, to endeavour, as far as is possible, to obtain at the outset the benefit of both plans and supervision.

Under most formal types of building and engineering contracts, then, the question of setting out is definitely provided for, but under many other contracts the tendency, at least, is to place the obligation upon the contractor. A building or engineering contract may contain a term to the effect that the setting out, though done by the contractor, should be "to the satisfaction of the architect." In such a case, should errors be afterwards manifest, the contractor would endeavour to shift the responsibility for them upon the architect, especially if the architect either definitely expressed his satisfaction as to what had been done or impliedly approved of the setting out, and in the latter instance with some possibility of success. In regard to such approval, reference may be made to Adcock's Trustee *v.* Bridge R.D.C. (1911), 75 J.P. 241, for this case would appear to apply to the setting out also. Here, where the question of how far the approval by the architect of certain materials, which when made up resulted in faulty work, would excuse the contractor, Phillimore, J., observed: "If there is a piece of green work built, the architect or the clerk of works may say" (in accordance with the terms of the particular contract in this case) "that it is badly done and must be pulled down and rebuilt. All work may be considered green for this purpose until the architect or the clerk of works has examined it on one of his visits. But when an architect *has looked at* the piece of work on one of these visits, and *has not condemned it*, and the contractor has obviously treated it as finished and taken his men off from it, and proceeded to some other piece of work, it occurs to me that" the article of the contract giving the architect power to order the removal of materials which in his opinion are not in accordance with the specification, or the instructions of the architect "ought not to apply." It would appear, therefore, that responsibility was fixed upon the architect in this case. He had power given him under the contract, and should have used it to condemn the particular work. The contractor, therefore, was entitled to the protection afforded him.

It is clear, then, that if the contractor follows the instructions of the architect or engineer, in accordance with the contract, and the architect or engineer approves, and errors subsequently become manifest, the responsibility for them is not the contractor's. It seems equally clear that should the employer, owing to the mistake of his architect or engineer, find himself in the position of having to bear the expense of righting any error caused by his architect or engineer, he can proceed against the latter for negligence.

A building or engineering contract may place the whole responsibility for the setting out of the works upon the contractor. A clause to that effect is included in a Model Form of Contract issued by the Housing Department of the Ministry of Health and primarily intended for use where local authorities are concerned. This clause is to the effect that the contractor is to set out the works, and during the progress of the building the contractor, unless the architect decides to the contrary, must amend at his own cost any errors arising from inaccurate setting out. The architect's decision under the clause is final.

The following practical considerations are of some importance to the contractor, inasmuch as they have some bearing upon his responsibility for the setting out of the works. The contractor need hardly be reminded that, in setting out in accordance with plans provided for him, he will of necessity, as regards the brickwork, work to brickwork dimensions. It follows, therefore, that he may not be able to keep rigidly to the actual dimensions given on the plans, but he must endeavour to do his best. It may also be laid down as a general rule that, in setting out, dimensions given in large detailed drawings should be followed, rather than general scale drawings.

Above, the situation has been considered in the case of building and engineering contracts where an architect is employed. Where, in small contracts, it is not infrequent for the builder to be his own architect, it is obvious that he must assume the whole responsibility for the setting out of the works as well as for the accurate dimensions of the plans from which he is working.

In a previous article the important question of inspection of the site was considered, and it was suggested that there is what amounts to a liability imposed upon a contractor to examine the site of the works which he proposes to erect, under contract, upon it. It is obvious, in regard to the matters now being considered, that any neglect upon his part to inspect the site might have serious consequences from the moment the contractor, on setting out, began the excavation for the foundation of the works proposed to be built. Furthermore, any neglect on his part to acquaint himself with such matters as the position of sewers, etc., might lead to much expense.

Moreover, the rights of adjoining owners must be considered, and no risk should be taken such as would render him liable to an action for trespass.

(*To be continued.*)

IN PARLIAMENT

Air-Raid Shelters.

Sir F. Sanderson asked the Lord Privy Seal whether, in view of the difficulties that had been placed in the way of private citizens who had provided air-raid shelters on their own property, he would provide that competent architects and surveyors, acting for the respective local authorities, were authorised to instruct householders, free of charge, as to suitable air-raid shelters that might be erected at householders' own premises, should they wish to provide these.

Sir J. Anderson said that it was already a part of the duty of local authorities to give advice and instruction to the public as to air-raid precautions. There was also a considerable amount of information and advice about air-raid shelters in the handbooks and memoranda issued by the department, and he was considering what further action could be taken.

Sir F. Sanderson asked the Lord Privy Seal whether he was aware that persons who, during the crisis week, in order to assist the authorities in the work of air-raid precautions, erected on their own premises, and at their own expense, air-raid shelters capable of sheltering a number of persons, were now threatened with a penalty under building by-laws of £5, and 40s. for each day after written notice of the offence from the council; and if, in view of the imminence of a state of national emergency at the time this air-raid precautions work was put in hand by the private individual, and the inadequacy of the precautions provided by the authorities, he would take immediate steps to protect persons who, in a spirit of patriotism and efficiency, provided air-raid shelters not only for the individuals concerned, but for a large number of other members of the general public.

Sir J. Anderson said he had received no information about the cases referred to in the question; but if his hon. friend would send him particulars he would at once look into the matter.

Mr. Parker asked the Lord Privy Seal whether the Government intended to license all builders of air-raid shelters; and, if not, what steps they proposed to take to see that all such shelters were suitably constructed.

Sir J. Anderson said they must rely upon the general dissemination of knowledge of the standards and methods of construction considered necessary. This was being achieved by the issue of handbooks and memoranda and by the co-operation of the professional bodies of architects and engineers.

Trading Estates.

Mr. D. Adams asked the Minister of Health whether, in connection with trading estates established by the Government, or in course of preparation, the question of the planning of satellite towns in connection therewith had received his consideration; and with what result.

Mr. Elliot said that in view of the proximity of the trading estates which the hon. Member had in mind to existing centres of population, he did not think that the consideration of this question arose, but as the hon. Member was no doubt aware, the Town and Country Planning Act, 1932, contained powers under which local authorities could develop garden cities where necessary.

Westminster Green.

Mr. Marcus Samuel asked the Secretary to the Treasury what decision had yet been arrived at as to the future of Westminster Green; and whether he could give an assurance that sympathetic consideration would be given to ensuring that this historic site should remain an open space for all time.

Capt. Wallace said that his hon. friend was not, he thought, referring to an open space but to the site of an existing building, which, if the building were demolished, might be added to Parliament-square. This proposal involved financial difficulties which had not yet been overcome, and the matter was still under the consideration of the Chancellor of the Exchequer.

BIRMINGHAM BUILDING TRADES EMPLOYERS

ANNUAL DINNER.

THREE hundred members and guests attended the annual dinner of the Birmingham Association of Building Trades Employers, held at the Grand Hotel, Birmingham, on Monday, November 14.

Proposing the toast of "The City of Birmingham," MR. WALTER F. HIGGS, M.P., after paying a tribute to the newly elected Lord Mayor, Alderman J. Crump, said the Association was a very important organisation in the city, for its members could be said to have built Birmingham. There were, however, many developments still to make, including an extension of the green belt, in which the Association's co-operation would be of great value. The speaker also referred to the important contribution which the building trade made to the provision of air-raids precaution refuges, etc.

The LORD MAYOR, who replied, said the city and the building trade had much in common, and satisfactory relationships had existed for the most part between the trade and the City Council. Indeed, one of the last functions performed by his predecessor was the presentation of the apprenticeship certificates given under a scheme drawn up by the Association Council and the Education Committee. He commended the scheme highly, because it was essential that they should retain the craftsmen in the building industry, so that they could build buildings of dignity and pride.

Conditions had changed in the building trade, largely as the result of new modes of construction in the past 20 years. The trade, however, had adapted itself to modern requirements. The Council had begun building the new Civic Centre, which he ventured to predict would be, when completed, one of the finest buildings of its kind in the world. The Council had also embarked in a new type of building in the market extension, which was to cost £145,000, and embody new features, including an underground car-park, convertible in times of emergency into an air-raid shelter.

The speaker mentioned the vast amount of housing work carried on in the city in recent years, both by the council and private enterprise. Slum clearance schemes were absorbing nearly all the additional working-class houses as they were built. So long as there was one family living in squalid, unhealthy conditions, their problem remained unsolved. He had no patience with those who declared that certain classes of people preferred to live under bad conditions, and there was much that remained to be done in connection with housing. For the first time since 1919, the total number of houses built in the city by private enterprise exceeded the number built by the Corporation. Of a total of 98,778, private builders had been responsible for 50,398, as against 48,300 built by the Corporation. It would probably surprise them to learn that in Birmingham in 1935 the total cost of building by both the Corporation and private enterprise, including houses and other erections, totalled £10,389,213. In 1936 the total was £10,091,807; in 1937 £8,626,109, and this year, up to June, was no less than £4,511,118. In 1937, the total number of houses built was 10,305, and they were still going ahead, and he hoped members of the Association would go on building working-class houses, because they were badly needed. In conclusion, the speaker declared that if the recent crisis had taught them anything, it was that the building trade played an important part in A.R.P. work.

National Federation's Work.

THE EARL OF DUDLEY, President of Birmingham Chamber of Commerce, who proposed the toast of "The Association," said he had for many years been interested in housing, as the chairman of the Council of Research on Housing Construction, and as a member of the Housing Advisory Committee of the Ministry of Health. He was also interested as a supplier of some of the essential raw materials. The National Federation, he said, had reorganised itself in an admirable way during recent years, and he paid a tribute to the work done to put the industry on a scientific basis. The joint wages board had undertaken to deal with the important question of wages and hours and conditions of work, so that they were able to escape from the undesirable atmosphere of local bickering and settle any disputes by a joint committee of employers and employees. They had also put on a scientific basis the question of contracts and sub-contracts; and had charged their Federation with dealing with the intricate problem of safety regulations. They had also taken steps to deal with the various housing and town-planning acts passed in recent years, and had placed before the Minister of Labour—shortly to be put into statutory effect—an important scheme for contributory insurance in respect of time lost by bad weather. He congratulated the Federation on the way they had dealt with that scheme, which suggested that they had done away with the problem altogether. The Federation was also dealing with the questions arising out of the new Factories Act and by-laws, and in view of the need for standardisation of by-laws, he realised how important this matter could be. He was particularly interested, as a member of the Housing Advisory Committee, in the excellent scheme that the Federation had started in regard to certificates given for well-built houses. It was a scheme that could be described as anti-jerry-building, and he believed it would have a very salutary effect all over the country in insuring against the exploitation of unfortunate people unable to judge between a good and a badly built house.

Referring to slum-clearance and rehousing, the speaker continued: "I hope this generation will go down with honour in history as the generation that did away with the slums and rehoused the people of England under decent conditions of living, and I look with the greatest possible pride as I travel through England at our magnificent housing estates." Birmingham was to be complimented on the share it had taken in this work, and not only the Corporation, but the private builders concerned, deserved every congratulation.

ALDERMAN H. E. PITT, Past-President of the National Federation, replying, said he wondered if the company realised that the industry with which they were connected employed more male workers than any other industry in the country, the number being over a million. He knew of no industry where the relations between employers and employed were so cordial, and, as a result, there was a feeling of confidence in the industry of which he was sure they were all proud. He was glad to be able to tell them that the fourth draft of the insurance against wet times scheme had been approved by the council on both sides, and was now before the Minister, who was now sympathetically considering their view of holidays with pay. He thought the satisfactory relations between employers and operatives were largely due to the fact that present-day employers, or their fathers or grandfathers, had themselves been operatives and knew the difficulties they had to contend with.

Mr. P. G. WHITEHOUSE, President of the Birmingham Association, also responding, spoke of the healthy conditions of the Birmingham Association, and went on to say that the local certificate of apprenticeship scheme was fathered by the builders, the Institute of Builders, the master painters, the employer plumbers and the local education authority. The scheme was to provide in some measure a supply of those men who were of great importance to the trade—the foremen and clerks of works of the future. Referring to A.R.P., he added that, in co-operation with the City Surveyors' department, a scheme had been evolved, dealing with the formation of rescue and demolition squads. During the recent crisis the members had risen to the occasion and had been able to supply the City Surveyor with a list of squads, all appointed to various depots. If events had taken an unfortunate turn the Birmingham builders would have played a part which would have done them great credit.

"Build Now!"

The speaker advised those who contemplated building to build now, because, he said, the chance of prices getting lower was, in his opinion, almost negligible. He could see many reasons for their rising, for schemes on hand, such as holidays with pay, would mean an additional cost on building, and the client had got to pay for them. There was much yet to be done in housing; the city had dark, dirty factories and office buildings completely out of date. Builders required confidence in themselves. They could not stand still. There was activity in Germany and Italy, and yet whatever justification there was for confidence in these countries, in no country was there more justification than in Great Britain. Therefore he repeated: "Build now."

Mr. E. J. BRYANT, Past-President of the Birmingham Association, proposed the toast of "The Guests," and Dr. R. E. Priestley, Vice-Chancellor and Principal of Birmingham University, responded.

Among those present were Messrs. W. G. Leslie Greaves, W. E. Ballard, P. V. Wall, J. Hill, S. Guy Sapcote, W. Alex Harvey, V. Theo Williams, S. N. Cooke, W. H. Forsdike, J. H. B. Dixon, J. E. Bagnall, G. Phillip Achurch, Percy Edgar, H. Eyles, T. Hannibal, K. O. Parker, and J. A. Fagan.

INDUSTRY AND DEFENCE

F.B.I. Interview With Prime Minister.

The Grand Council of the Federation of British Industries, at its last meeting, authorised the President, Mr. Peter Bennett, to set up a committee to consult with the Government regarding the steps which could be taken to further co-operation between industry and the Government for the speedy carrying out of the Defence Programme, and the fuller development of plans for the mobilisation of industry in the event of war.

The President has appointed the following gentlemen to serve on this committee under his chairmanship: Lord Gainford, Lord Hirst, Sir James Lithgow and Sir George Beharrell—Past-Presidents of the F.B.I.—and Mr. Guy Locock, Director of the F.B.I.

On November 14 the Prime Minister, who was accompanied by the Lord Privy Seal and the Minister for the Co-ordination of Defence, received members of this committee, and welcomed the offer of co-operation. He requested that Mr. Bennett should discuss with Sir Thomas Inskip and Sir John Anderson the best methods by which the F.B.I. could assist the Government in the full and speedy development of their plans. Meetings with these two Ministers will take place in the near future.

THE FIVE-YEAR PLAN

LOCAL AUTHORITIES' SCHEMES.

Brief details of schemes of local authorities for expenditure on capital works proposed during the next five years are:—

CHICHESTER.—Schemes included in the five-year plan accepted by the R.D.C. include new council offices, estimated to cost £24,650; public conveniences, estimated to cost £6,300; 200 houses, estimated at £80,000; and car parks, estimated to cost £8,500.

DUNMOW. — Dunmow Rural District Council have approved an expenditure of £280,000 for five years from April 1 last.

GREENWICH.—The B.C. are considering expenditure during 1938-1943 as follows: Cemeteries and crematorium, £16,000; housing, £767,710; public libraries, £18,000; clinics, £25,000; disinfecting stations and conveniences, £17,500; roads, refuse collection, disposal and sewerage, £169,700; new town-hall (in erection), £227,757; A.R.P. services, £125,000; a total of £1,367,167.

KEYNSHAM.—The estimated expenditure over the five-year period is £119,800, the major portion of which will be spent on housing.

WEST BROMWICH.—The T.C. is to spend nearly £3,000,000 in capital expenditure on works during the next five years. Plans have been passed for a £3,856 clinic at Stone Cross.

INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.
We do not undertake to reply to inquiries concerning proprietary materials.—ED.

QUESTIONS.

Tenders.

SIR,—For how long may a contractor be bound to his tender for building work, assuming that he has not withdrawn it before acceptance? ARCHITECT.

Metal Trim.

SIR,—I note various advertisements of pressed steel architraves, linings and skirtings, etc., and should be glad to know (a) Whether it is necessary that these should be backed up solid with cement or fine concrete; and (b) What is the comparative cost of such finishings fixed complete with such backing (if necessary) as compared with similar wood fittings. MODERN.

ANSWERS.

Acoustics of Hall.

[ANSWERS TO "E. V. W.," NOVEMBER 18.]

SIR, — Regarding your correspondent's acoustical problem, it is usually sufficient for acoustic treatment to be localised on the back walls, with possibly a return band of the same material along the side walls. In this case, however, as there is a barrel-shaped ceiling, it would seem desirable to line the ceiling with a good proprietary sound-absorbent material. [The name of the material in question can be obtained from us.—ED.]

It is rather difficult to give actual cost for labour and materials for obtaining correct acoustics in the memorial hall without seeing the actual plans of the hall, together with particulars as regards seating and uses of the hall. I would advise your correspondent to get in touch with a reputable firm of acoustical engineers with a view to making an acoustical analysis and submitting a report.
A. J. T. E.

SIR,—The ceiling, being barrel-shaped, presents a problem. This portion could be asbestos-sprayed, which can cost between 10s. and 15s. per yard, or, provided your correspondent can get a fixing on the ceiling joists, he could fix an acoustic board at 6d. per foot. This would, of course, require a certain amount of cutting to shape and the joists filled and decorated. Again, he could fix on an asbestos blanket which would need to be covered with lath and plaster. The same method could be applied to the walls. The size of blankets, ½ in. thick, is usually 18 ft. by 3 ft. In the case of the windows, if daylight is essential an inner casement should be made of glass, forming, so to speak, a double sash.

The doors inside the hall could, perhaps, be made into flush doors. Before applying the plywood face the frame should be covered with a reputable fibreboard.

With further reference to the ceiling, one might deal with the matter on the top, i.e., between the outer roof and the top of the barrel ceiling.
G. W. H.

SIR,—I would urge your correspondent to engage an expert, whose advice might well lead to a simple and inexpensive cure for the trouble. REVERBERATION.

[A reply from Vibro-Insulations, Ltd., has been forwarded to our correspondent.—ED.]

Timber and Brick Houses.

[ANSWER TO W. DE H. H., NOVEMBER 18.]

SIR,—In my reply to this query which you quoted in your last issue there is an incorrect statement. Instead of saying that the saving on a £1,250 house would be £100, I should have said that the saving on one costing £800 would be £100. The remainder of my letter stands with this correction.
YOUR CORRESPONDENT.

Wall Treatment for Kitchen.

[ANSWERS TO "E. T.," NOVEMBER 4.]

SIR,—There are several materials available which are specially suitable for covering domestic kitchen walls. These include glazed wall tiles and an enamelled metal tile decoration on zinc, which is permanent, hygienic, easily washable and artistic and is approximately half the cost of glazed tiles. The fixing of this latter material is quite simple, using white lead paste, and the kitchen walls could easily be done in one day without noise, dirt or interference with the household. There is also a stipple glazed material which may be obtained in the form of decorated or plain white glaze asbestos-cement sheets These sheets are clean and very economical for kitchen wall surfaces Plywood faced with aluminium, or stainless steel sheets, would also eliminate cleaning.
A. J. T. E.

[The names of the materials suggested can be obtained from us.—ED.]

SIR,—Your correspondent probably means that his aim is to make conditions suitable for easy cleaning, not to eliminate cleaning, since this latter is impossible. There will always be steam to condense and dust to foul the condensed steam, so that matt surfaces will ultimately soil. Smooth glazed surfaces will also soil but are easily wiped down. I therefore recommend opaque glass sheets, if this can be afforded, or glazed tiles as a good second best.
SURFACE.

White Glazed Wall Tiling.

[ANSWER TO "E. S.," NOVEMBER 11.]

SIR,—Tiles breaking away may be due to the wall vibrating, as would be caused by slamming doors, etc. Soaking before laying is, to a great extent, overdone, for prolonged soaking is not to be recommended. Just before laying they should be given a coat of cement wash and placed while still tacky. Pressure for about an hour on the tiles until the cement has set is desirable for the strongest joints, which can usually be arranged by props. W. E. W.

Road Charges Question.

[ANSWER TO "E. H. B.," NOVEMBER 11.]

SIR,—This is a very interesting question. "E. H. B." appears to have the enjoyment of a made-up approach to his property, over which his occupiers will create some wear and tear. It seems equitable, therefore, that he should contribute to its cost. On the other hand, contribution by frontage measurement is at best a rough-and-ready method of assessment, and when the authority takes over the next section of road the cost will be based on frontage, and "E. H. B." will have paid more than his share, unless a third owner is called in to contribute at the new end. I am of opinion that the claim that this is a frontage would not be upheld. ROADS.

Treatment of Walls before Papering.

[ANSWER TO "H. S.," NOVEMBER 4.]

SIR,—The walls must dry out first, so far as actual moisture is concerned. When dry, discoloration by the action of the alkali in lime products can be avoided by the application of a good plaster primer as sold by most reliable paint manufacturers. PAPERHANGER.

Brisbane Trade Commissioner's Visit.

The Department of Overseas Trade announces that Mr. J. R. Adams, His Majesty's Trade Commissioner at Brisbane, is now in the United Kingdom on an official visit. Mr. Adams will be at the Department of Overseas Trade for the week commencing Monday, December 5, for the purpose of interviewing manufacturers and merchants interested in the export of United Kingdom goods to Australia, after which he will undertake a short tour of certain industrial centres in the provinces. Firms who desire interviews with Mr. Adams in London, or wish to obtain information regarding his arrangements to visit the provinces, should apply to the Department of Overseas Trade, 35, Old Queen-street, S.W.1, quoting reference 14763/1938.

A HOUSING CONFERENCE

A National Housing and Town Planning Conference will be held at Harrogate from Friday, November 25, to Monday, November 28, under the auspices of the National Housing and Town Planning Council, 41, Russell-square, London, W.C.1. On the first day of the conference an address will be given by the Rt. Hon. Walter Elliot, Minister of Health, and at the evening session following, the subject of "Housing Finance.—Subsidies, Building Costs, and Rents" will be discussed.

On the Saturday, papers will be submitted by Miss Mary Besly and Mr. Wallace Smith, F.S.I., F.A.I., on "The Management of Housing Estates." Sir Raymond Unwin, D.Tech., P-P.R.I.B.A., will preside at the afternoon session, when papers on "Decentalisation and Satellite Towns" will be read by Alderman W. T. Jackson, Councillor C. B. Purdom, Professor S. D. Adshead, M.A., F.R.I.B.A., and Mr. W. R. Davidge, F.R.I.B.A. The meetings will be held in the Royal Hall, Harrogate.

A separate session for rural delegates will be held on Saturday afternoon at the Grand Hotel, when papers on "Rural Planning" and "Rural Housing Administration" will be submitted.

BUILDINGS ILLUSTRATED

Council Suite, Essex County Hall.

The general contractors for this work—the Council Chamber and Members' Lobby—were Messrs. T. J. Bailey and Son, Victoria-street, Chelmsford. Sub-contractors were: Dorman, Long and Co., steelwork; Kleine Co., Ltd., fireproof roof; Bath and Portland Stone Firms, Ltd., Doulting and Portland stone; Fenning and Co., marble pavings; J. P. White and Son, Ltd., flooring, seating, doors and carpet; G. Jackson and Sons, Ltd., fibrous plaster and gilding; May Acoustics, Ltd., acoustic plaster; Luxfer, Ltd., bronze windows and glazing; R. B. Studios, iron balustrading and bronze guard rails; H. H. Martyn and Co., Ltd., bronze grilles; Barry Hart, stone carving; Chapman Bros., fixing paintings; Essex Electric Installations, Ltd., lighting; and General Electric Co., Ltd., electric light fittings.

Mr. Vincent Harris, A.R.A., was the architect, in collaboration with Mr. J. Stuart, F.R.I.B.A., the County Architect. The work is illustrated on pages 1021-23.

NEW CINEMAS

BAKER-STREET.—Plans have been prepared for the development of a site in Baker-street, Dorset-street, and Blandford-street, W.1, by the erection of a block of buildings comprising shops, flats, two cinemas, etc. The architects are Messrs. Wimperis, Simpson and Guthrie, 61, South Molton-street, W.1.

BENFLEET. — The Pavilion Cinemas (Whitehall), Ltd., Whitehall House, Whitehall, S.W.1, propose to erect a cinema seating about 900 persons. Plans have been prepared by the company's architect, Mr. J. E. Farrell, A.R.I.B.A. No contracts let.

HERTFORD. — The T.C. have approved plans for alterations to the Castle Cinema for Messrs. Shipman and King, Shell-Mex House, Strand, W.C.2. The architects are Messrs. Howis and Belcham, 9, Fenchurch-street, E.C.3.

JOHNSTONE.—Messrs. Maxwell, Stewart and Maxwell, 57, Oswald-street, Glasgow, have prepared plans for the erection of a cinema. The building contract will be carried out by Messrs. Stellmacs, Ltd., Glasgow.

RIPON. — Mr. E. R. Wood, of Rusford Estates, Ltd., proposes the erection of a cinema. The architects are Messrs. Pennington, Hustler and Taylor, 45, Ropergate, Pontefract.

Metropolitan Water Board: Annual Report.

The recently published 35th annual report of the Metropolitan Water Board contains 122 pages, and two coloured diagrams showing the average daily supply from the several sources, 1928-29 to 1937-38, and the Thames flow and abstraction and rainfall in the Thames Valley, 1928-29 to 1937-38. Copies of the report may be obtained from the Board's Publication Agents, P. S. King & Son, Ltd., 14, Great Smith-street, S.W., price 5s.

NEW BUILDINGS IN LONDON

ACTON.—FLATS.—Plans have been prepared by Messrs. Percy Pratt and Blount, 174, High Street, W.3, for 44 flats in Carlton-road and St. Albans-avenue, W. No contracts placed.

BARNET.—BRANCH.—Premises are to be erected at 99, High-street for Messrs. Price's Tailors, Ltd., Cardigan-crescent, Kirkstall-road, Leeds, for which a contract has been placed with Messrs. Henry Kent (Builders), Ltd., 51, Beacon-road, Hither Green, S.E.13. Plans by the company's staff architect, Mr. P. S. B. Nicolle, L.R.I.B.A.

BARNET.—FACTORY.—Offices, etc., are to be erected in Barnet by-pass-road, to the plans of Messrs. Fuller, Hall and Foulsham, 212, High Holborn, W.C.1. The contractors are Messrs. C. Miskin and Son, Romelands, St. Albans.

BATTERSEA.—CHURCH.—The council has approved in principle the provision of a public air raid shelter in the new building to be erected by the Battersea Forward Movement in York-road.

BATTERSEA. — REBUILDING. — Messrs. Watney, Combe, Reid and Co., Ltd., Stag Brewery, S.W.1, are proposing the rebuilding of the "British Flag" public-house, 101-103, Culvert-road.

BEDFONT. — FACTORY.—The Great West Road Estates (London), Ltd., are to erect a new factory on the Great South-West Road, and not as incorrectly stated in our issue of November 11.

BRENTWOOD.—BRANCH.—Premises are to be erected at 40, High-street for Messrs. Montague Burton Estates, Ltd., Hudson-road Mills, Leeds, to the plans of the staff architect, Mr. Nathaniel Martin, L.R.I.B.A. The contract has been placed with Messrs. George Moss and Sons, Ltd., Cranleigh-wharf, Lady Margaret-road, Southall.

BROMLEY.—REBUILDING.—Messrs. Nowell Parr and Son, 97, Old Brompton-road, S.W.7, are the architects for rebuilding the "Greyhound" public-house, Commonside, Keston. The successful contractors are Messrs. W. Loweth and Sons, Ltd., 67, Downs Park-road, Hackney, E.8.

CAMBERWELL.—ADDITIONS. — Comprising new science laboratories, library, assembly hall and dining room extension, etc., are to be made to Wilson's Grammar Schools, Peckham-road, S.E., for the governors. The tender of Messrs. Falkus Bros., Ltd., 46, Bishopsgate, E.C.2, at £13 891, has been accepted.

CAMBERWELL. — REBUILDING. — Messrs. Adie, Button and Partners, 30, George-street, Hanover-square, W.1, are the architects for the rebuilding of Messrs. Steele Griffiths' premises on the site of Old County Court-house, Camberwell New-road and Medlar-street. The builders are Messrs. Geo. Parker and Sons, Ltd., 124, Sumner-road, Peckham, S.E.15.

CAMBERWELL. — BUILDING. — Messrs. Lewis Solomon and Son, 21, Bloomsbury-way, W.C.1, are the architects for the development of a site in Foxley-road, Cranmer-road and Camberwell New-road, for factory purposes. No contracts placed.

CANNON-STREET.—OFFICES.—A contract has been placed with Messrs. E. D. Winn and Co., Ltd., 25, Buckingham-gate, S.W.1, for a block of offices and showrooms at Nos. 112-114. Plans by Mr. Gervase Bailey, F.R.I.B.A., 25, Buckingham-gate, S.W.1.

CATFORD. — BUILDINGS.—The Lewisham B.C. has approved plans for Mr. A. Frampton. Bromley Hill Estate office, to erect buildings on a site on the south side of Southend-lane.

CATFORD.—SCHOOL.—The Lewisham B.C. has received a letter from Rev. D. F. Coffey and others, giving notice that they propose to provide a new public elementary school for about 240 senior children at Catford.

CHELSEA.—REBUILDING.—Of the "Fulham Bridge Tavern" public-house, 66, Brompton-road, S.W.3, is to be undertaken by Messrs. Charrington and Co., Ltd. The contractors are Messrs. Patman and Fotheringham, Ltd., 15, Islington Park-street, N.1. The architects are Messrs. G. Gordon Stanham, L.R.I.B.A., 26, Bush-lane, E.C.4.

CITY-ROAD. — PREMISES.—The Islington B.C. has approved of the erection by Messrs. Knolles, Ltd., 66, Finsbury-pavement, E.C.2, of a building at 347 and 349, City-road. The plans and building work are by the owners themselves.

CRANFORD.—SCHOOL.—The Heston and Isleworth T.C. are inviting tenders for the erection of an infants' school (450 places) at Berkeley-avenue. Mr. J. G. Carey, Assoc.M.Inst.C.E., Borough Surveyor, has prepared the plans.

CROYDON.—SCHOOL.—Messrs. W. G. Wilson, Son and Harrington, Tudor Cottage, Sedson-road, South Croydon, are the architects for the new Portland school, for the T.C., and not as stated in our last issue.

CROUCH END.—FLATS.—Plans have been prepared by Mr. I. Schultz, A.R.I.B.A., 101, Alexandra-road, St. John's Wood, N.W., for 96 flats and 45 garages on the site of Woodlands, Crouch End Hill, N. No contracts placed.

DOWNHAM. — PARSONAGE. — Sir Charles Nicholson and T. J. Rushton, 2, New-square, Lincoln's Inn, W.C.2, are the architects for a parsonage on a site at the junction of Durham Hill and Churchdown. Mr. J. Hastings, 34, Tucker-street, Watford, is the contractor.

EDMONTON.—PAVILION.—The T.C. has accepted the tender of Mr. Albert Monk, Lower Edmonton, N.9, at £6,590, for a sports pavilion at Jubilee Park. Plans by the surveyor, Mr. E. J. Willis, A.M.Inst.C.E.

EALING.—SCHOOL.—The B. of E. has approved the sketch plans by the Borough Engineer for the new senior boys' school at Islips Manor. Tenders are to be invited.

EALING.—HOUSES.—The T.C. has passed plans for Messrs. T. F. Nash Construction, Ltd., Uxbridge-road, Hayes, for 266 houses in Bournemead-avenue, 173 in Townson-avenue, 16 in Edward-road, 63 in Longhook-gardens, 22 in Rayners-crescent, 17 in Bankside-avenue, 28 in Edward-road, 20 in Edward-close, 18 in Heron-drive, all on the West End Farm estate.

EALING.—FLATS.—Mr. H. Langford Moyle, 49, London-road, Twickenham, is the architect for 13 blocks of flats, 52 in all, in Sandall-close, for Messrs. John Turner and Sons (Preston), Ltd., builders, 108, Great Chertsey-road, Twickenham.

EDGWARE-ROAD. — PREMISES. — Preliminary plans have been prepared by Adie, Button and Partners, 30, St. George-street, Hanover-square, W.1, for the development of the site of Edgware-road underground station, with frontages to Marylebone-road and Chapel-street, W., by the erection of a block of business premises, etc.

ENFIELD.—PAVILION.—The U.D.C. are inviting tenders for a sports pavilion, café, cottage and public convenience on the Enfield Playing Fields, Cambridge-road. The engineer and surveyor, Mr. Frank Lee, L.R.I.B.A., Assoc.M.Inst.C.E., 7, Little Parkgardens, has prepared the plans.

FINCHLEY. — DRILL-HALL.—And anti-aircraft headquarters, etc., are to be built in Great North-road and North Circular-road, N., for the Middlesex Territorial Army and Air Force Association, 20, Grosvenor-gardens, S.W.1. The contract has been placed with Messrs. Harry Neal, Ltd., 117, Baker-street, W.1. The architects are Messrs. Cranfield and Mackenzie, 29, St. George-street, Hanover-square, W.1.

FLEET-STREET.—REBUILDING.—The block of offices, etc., including Anderton's Hotel, at Nos. 161-166, is to be demolished and rebuilt. Plans have been prepared by Mr. Reginald W. Lone, A.R.I.B.A., 15, New-square, Lincoln's Inn, W.C.2.

GREENFORD.—FLATS.—Mr. G. P. Townsend has submitted an application to the Ealing T.C. for the layout of 276 flats, arranged in 65 blocks of 4 flats and 8 blocks of two flats on the Highview estate.

GREENFORD.—FACTORY.—And offices are to be erected by Messrs. Allnatts, Ltd., Chase Estate, Park Royal-road, N.W.10, for Messrs. Stanley A. Bevin, Ltd., in the North Circular-road. Plans have been approved by the Ealing T.C.

GREENWICH.—HOUSING.—The Housing Committee of the B.C. recommend the demolition of the buildings known as East Mascalls, Charlton-road, and to the erection on the site of 20 one-room and six two-room flats by the direct employment of labour at £9,420.

HACKNEY.—DWELLINGS.—The B.C. has placed contracts with Messrs. John Laing and Son, Ltd., Mill Hill, N.W., at £92,865, for the erection as working-class dwellings of 285 flats on the council's Springfield housing site, and with Messrs. Ford and Walton, Ltd., 53, Victoria-street, S.W.1, at £92,250, for the erection as working-class dwellings of 255 flats on the council's Warwick-road housing site. Messrs. Joseph, 2, Paul's Bakehouse-court, E.C.4, are the architects.

HALLAM-STREET.—FLATS.—A block of flats and garages are to be erected on the sites of Nos. 75-89. Mr. A. Wollenberg, 23, Hertford-street, W.1, is the architect and Messrs. Rice and Son, Ltd., 15, Stockwell-road, S.W.9, are the builders.

HAMPSTEAD.—FLATS.—Plans have been prepared by Mr. W. Clarke, 29, The Chase, Bromley, for a block of flats in Lyndhurst-gardens, Fitzjohn's-avenue, N.W., for clients of Messrs. Clymo and Co., 1, York-street, W.1.

HANWORTH. — BAKERY. — Messrs. Price and Co. (Bakers), Ltd., 118, Coldharbour-lane, S.E.5, are to erect a bakery and offices in Twickenham-road. Plans have been prepared by Mr. M. W. Hudson, P.A.S.I., 9, Northumberland-avenue, Wanstead, E.12. No contracts placed.

HESTON.—DRILL HALL.—And anti-aircraft headquarters are to be built at the junction of Vicarage Farm-road and Cranford-lane, for the Middlesex Territorial Army and Air Force Association, 20, Grosvenor-gardens. Plans have been prepared by Messrs. Cranfield and Mackenzie, 29, St. George-street, Hanover-square, W.1. No contracts placed.

HIGH HOLBORN. — REBUILDING. — The Brixton Estate, Ltd., 88, Hatton-garden, E.C.1, are rebuilding a block of offices and shops at Nos. 58, 60 and 62. Plans have been prepared by Messrs. Lewis Solomon and Sons, 21, Bloomsbury-way, W.C.1. The quantity surveyors are Messrs. Baker and Mallett, 81, High Holborn, W.C.1, and the builders are Messrs. C. P. Roberts and Co., Ltd., 31, High Holborn, W.C.1.

HOLBORN. — DWELLINGS. — The Housing Committee of the B.C. has recommended that Mr. E. C. Harris, of 3, Bedford-square, W.C.1. be appointed quantity surveyor for the Dombey-street housing scheme, and that tenders for the demolition of Nos. 27-28 (inclusive) and for the erection of dwellings on the site be obtained.

ISLINGTON.—EXTENSIONS.—The B.C. are proposing to erect at a cost of £1,175 a gymnasium in part of the building to be erected for the use of tenants in connection with the extension of Blythe Mansions.

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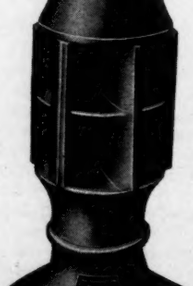

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46-17

KENNINGTON. — ALTERATIONS. — Messrs. Joseph, 2, Paul's Bakehouse-court, E.C., are the architects for alterations to the N.A.A.F.I. canteen, St. James's Church site, Kennington Park-road.

LAMBETH.—REBUILDING.—Messrs. P. H. Clarke and Son, 5, Arundel-street, W.C.2, are the architects for the rebuilding of the Crown Engineering-works in Theed-street. No contracts yet placed.

LAMBETH. — FLATS.—Mr. E. Cavanagh, First Avenue Hotel, High Holborn, W.C.1, is the architect for a four-storey block of flats at 2, Binfield-road. The builders are Messrs. Taylor and Ash, of Buckingham-street, W.C.2.

LAMBETH. — ADDITIONS.—Messrs. Parr and Sons, New Broad-street House, E.C.2, are the architects for additions to a factory in Mead-row and King Edward-walk. No contracts placed.

LEE.—SHOPS.—Mr. Frank Durrant, 114, Cheapside, E.C.2, is the architect for three lock-up shops on a site in Burnt Ash Hill at the corner of Station-approach. No contracts placed.

LEWISHAM. — HOUSES.—Messrs. Wates, Ltd., 1258, London-road, S.W.16, are erecting 46 houses in Conisborough-crescent, and a three-storey block of flats on four sites in Bromley-road, Catford.

LEWISHAM.—IMPROVEMENTS.—The tender of Messrs. Truett and Cox (Surrey), Ltd., 348, London-road, North Cheam, has been recommended for acceptance by the B.C. for improvements at the open-air bath, at £2,577.

LEWISHAM. — EXTENSIONS. — Are to be made to the "Holly Tree" public-house, Dermody-road, S.E., for Messrs. Charrington and Co., Ltd., who have placed a contract with Messrs. H. and J. Taylor (Contractors). Ltd., Canada House, Hither Green-lane, S.E.13. The architect is Mr. S. C. Clark, F.R.I.B.A., 86, Fenchurch-street, E.C.3.

LEWISHAM. — POLICE STATION. — Messrs. Henry Kent (Builders), Ltd., 51, Beacon-road, S.E.13, have secured the contract for the superstructure of the new police station at Southend Village for the Metropolitan Police Authorities. Mr. G. Mackenzie Trench, F.R.I.B.A., is the police architect.

LEYTON.—EXTENSIONS.—Are to be made to the premises of Messrs. Frank Austin, Ltd., in Argall-avenue, Staffa-road. The architects are Messrs. P. C. Boddy, F.R.I.B.A., and D. Gainsborough Waring, F.S.I., 19 and 21, Palace-street, Westminster, S.W.1, and the builders are Messrs. Moore and Wood, Ltd., 262, Langham-road, N.15.

LONDON. — BUILDING. — The L.C.C. has been recommended by the various committees to accept the following: the tender of Messrs. Stewart and Partners, Ltd., 105, Baker-street, W.1, at £62,934 11s., for a new nursery and modernisation of Ladywell institution, Lewisham; a new school, for 1,416 children, on the Abney Park site, Stoke Newington, at a cost of £54,900; rebuilding the Shacklewell school, Hackney, at £42,105; make a grant to the managers of the Hackney Free and Parochial School in connection with a new school; the tender of Messrs. W. H. Gaze and Sons, Ltd., 23, High-street, Kingston, at £42,173 for a maternity block at Hackney Hospital; the tender of Messrs. Stewart and Partners, Ltd., at £54,290, for a nurses' home at St. Francis Hospital, Dulwich; £44,000 for housing in Freda-street, Bermondsey, by providing 167 dwellings; £48,850 for 86 dwellings on the Grace-street area, Poplar; £193,500 for 336 dwellings on the Phœbe-street area, Poplar; £99,020 for 174 dwellings on the Sultan-terrace area, Camberwell.

MIDDLESEX.—SCHOOLS.—The E.C. has recommended the following tenders for acceptance by the C.C.: Messrs. A. Roberts and Co., Ltd., 74, Earl's Court-road, Kensington, W.8, at £78,210, for the erection of a senior school in Bacon-lane, Roe Green, Kingsbury; Messrs. W. S. Try, Ltd., High-street, Cowley, Uxbridge, at £32,702, for a school in Cherry-lane, West Drayton, and Messrs. J. C. Rackham, Uxbridge-road, Harrow Weald, at £10,861, for a school clinic, library and welfare centre in Honeypot-lane, Stanmore.

PARK ROYAL.—EXTENSIONS.—And alterations are to be made to the premises in Park-avenue, N.W.10, of the Reliance Service Transport (London), Ltd. Plans have been prepared by Mr. F. Lincoln Berry, P.A.S.I., 12, Clifford-way, N.W.10.

PERIVALE.—STATION.—The L.P.T.B., 55, Broadway, S.W.1, is to construct a station in Hanger-lane in connection with the Central London Railway extension. The board's chief architect is Mr. S. A. Heaps, L.R.I.B.A. No contracts let.

PORTLAND-PLACE. — EXTENSION. — The B.B.C. has placed a contract with Messrs. Higgs and Hill, Ltd., Crown-works, South Lambeth-road, S.W.8, for retaining walls, substructure works, etc., at Nos. 10-22, with frontages to Hallam-street and Duchess-street, W.1, in connection with the extension of Broadcasting House. The plans have been prepared by Messrs. Val Myer and Watson-Hart, Abbey House, Victoria-street, S.W.1, and Messrs. Wimperis, Simpson and Guthrie, 61, South Molton-street, W.1, in conjunction with Mr. M. T. Tudsbery, the Corporation's chief civil engineer, with whom Messrs. S. H. White and Son, 9, Victoria-street, S.W.1, are acting as consulting engineers. The quantity surveyors are Messrs. Ainsley, 3-4, Portsmouth-street, W.C.2.

POTTERS BAR.—GARAGE.—And petrol-filling station are to be erected at Mutton-lane, to the designs of Mr. W. Newcome Wright, 164, Bishopsgate, E.C.3. The contractors are Messrs. Leightons (Contractors), Ltd., Darkes-lane, Potters Bar.

PURLEY. — SHOWROOMS.—The County of London Electric Supply Co., Ltd., 46, New Broad-street, E.C.2, have submitted an application to the Coulsdon and Purley U.D.C. for permission to erect showrooms, etc., on land in High-street, Purley.

ST. JOHN'S WOOD.—FLATS, ETC.—Plans have been prepared by Mr. H. Kamenka, F.I.A.A., 27, Clifton Hill. Hampstead, N.W.8, for the development of the site in Wellington-road, Circus-road and Kingsmill-terrace, N.W., by a block of buildings comprising flats, shops, bank, garages, etc. No contracts placed.

ST. PAUL'S CRAY. — MILLS. — Messrs. William Nash, Ltd., paper manufacturers, are to erect large paper mills, etc., in Main-road. Plans by Mr. Douglas T. McIvor, 8, Old Road East, Gravesend, whilst the contract has been placed with Mr. J. B. Lingham, 1. The Hill, Northfleet.

SANDERSTEAD. — SHOPS. — Mr. W. O. Hudson, 35, Stafford-road, Wallington, is the architect for two shops and alterations and additions at "Clandon," Limpsfield-road, Sanderstead. The builders are Messrs. C. H. Gibson, Ltd., 509, London-road, Croydon.

SHEPHERD'S BUSH. — HEADQUARTERS. — The County of London Territorial Army and Air Force Association, Duke of York's Headquarters, King's-road, S.W.3, has acquired a site in Uxbridge-road, W., for new headquarters, etc., for the 1st Div. (Anti-Aircraft), R.A.S.C. The architect is Mr. Harold Dicksee, F.R.I.B.A., 15, Portman-street, W.1, and the building contract has been let to Messrs. Allen Fairhead and Sons, Ltd., Sydney-road, Enfield.

SHEPHERD'S BUSH.—FLATS.—The Housing Committee of the Hammersmith B.C. has recommended the Council to accept the tender of Messrs. Kirk and Kirk, Ltd., of Atlas Works, Putney, to erect 100 flats and maisonettes, including pram-sheds and drying-rooms, on the site of the Becklow-place clearance area, at £79,706.

SOUTHALL. — HOUSES. — The T.C. has passed plans for 122 houses on the Towers estate, Allenby-road, for Messrs. R. Lancaster and Sons (Cleveleys), Ltd., 30, Ealing-road, Wembley.

SOUTHALL.—HOUSES.—The T.C. has now accepted the tender of Mr. J. A. Wise, of Harrow Weald, amounting to £47,084, for the erection of 122 houses and bungalows, 2 shelters and a pump house on the Dormers Wells Housing site.

STEPNEY.—ALTERATIONS.—Are to be made to the "Blind Beggar" public-house, 337, Whitechapel-road, E., for Messrs. Mann, Crossman and Paulin, Ltd. The contract has been placed with Messrs. A. E. Symes, Ltd., 1a, Carpenters-road, Stratford, E.15. The architects are Messrs. Stewart and Hendry, FF.R.I.B.A., 90, Fenchurch-street, E.C.2.

STEPNEY.—DWELLINGS.—The L.C.C. are to lease to the Stepney Housing Trust land in Waley-street area for the erection of working-class dwellings.

STONELEIGH PARK. — SHOPS. — Messrs. Marshall and Tweedy, FF.R.I.B.A., 96, New Cavendish-street, W.1, have prepared the plans for a parade of shops and business premises to be erected at the Broadway, Stoneleigh Park. The contract has been placed with Messrs. George Moss (London), Ltd., Dorchester-road, Northolt Park.

WANDSWORTH. — ADDITIONS.—Mr. S. A. Heaps, chief architect to the L.P.T.B., has prepared plans for alterations and additions to Wandsworth Tram Depot, Jews-row, and a contract has now been placed with Messrs. L. and W. Whitehead, Ltd., 169, Clapham-road, S.W.9.

WEST EALING. — HALL.—Shop, billiards-hall and offices are to be erected at 3, 5 and 7, The Broadway, W.13. Messrs. W. and F. Eves, 54, High-street Uxbridge, submitted the plans to the Ealing T.C., on behalf of Messrs. Montague Burton, Ltd., of Leeds.

WEST EALING.—SHOWROOM.—The Green Man Garages (Ealing), Ltd., 64, The Broadway, W.13, are to have new showrooms at the garage in Green Man-lane. The plans have been prepared by themselves, and the building work is to be carried out by direct labour.

WIMBLEDON.—BUILDING.—The Corporation invite tenders for a block of 12 flats for firemen's quarters on a site adjoining the Fire Station; extensions to the existing Fire Station, consisting of new fire appliance room and ambulance garage with store at rear; alterations to the existing fire station; and the lay-out and construction of a public car park at the rear of the block of flats, in Queen's-road. The Borough Engineer and Surveyor has prepared the plans.

PUBLIC WORKS

GREAT BRITAIN (Ministry of Health).—Following are notes on some loans sanctioned by the Minister of Health during the week ended November 12: Cardiff C.B.C., £50,000 for advances under the Small Dwellings Acquisition Acts, 1899-1923; £60,939 for 156 houses, Highmead Estate, Ely; Chorley B.C.—£39,202 for 92 houses and construction of roads and sewers, Brown-street site; Dursley R.D.C.—£12,920 for works of sewerage and sewage disposal, Cam; Eastbourne C.B.C.—£30,000 for advances under the Small Dwellings Acquisition Acts, 1899-1923; Hertfordshire C.C.—£49,391 for the Hitchin Old Hall Way Sen. Coun. Sch.; Huddersfield C.B.C.—£30,000 for widening and improvement of Bradford-road; Liverpool C.C.—£54,592 for new premises for Queen Mary High Sch. for Girls; Margate B.C.—£10,375 for refuse collection and disposal; Middlesex C.C.—£33,406 for widening and improvement of Uxbridge-road; Reading C.B.C.—£42,056 for erection of 100 houses, Whitley Housing Estate (Section 5); Sheffield C.B.C.—£88,700 for construction of roads and sewers, Parson Cross Estate; Slough U.D.C.—£35,600 for works of water supply; Stockport C.B.C.—£45,406 for new public elem. sch., Avondale-road; Tamworth B.C.—£33,680 for 96 houses, Amington-road and Gloucester-road site.

GREAT BRITAIN. — Among contracts advertised in this issue by local authorities as being open to tender are: Durham C.C.—Consett New Secondary School, Black Fyne-road, Blackhill—additions to Bolden Colliery Intermediate School; Ealing T.C.—erection of West Greenford Infants' School; Hexham R.D.C.—six houses, Humshaugh; Chester Corp.—89 houses and 24 flats, Lache Housing Estate; Grimsby E.C.—Infants' School, Nunsthorpe; Coventry T.C.—170 houses and 170 tool-sheds, Pinley Fields Estate; Newport T.C.—erection of Main Municipal Block, Civic Centre Scheme; Romsey T.C.—22 houses on Alma-road housing site (and other works); Oldham T.C.—224 houses Stoneleigh No. 2 housing scheme; Met. Water Board—11 cottages, Balaclava-road and Fleece-road, Surbiton, Surrey.

LEEDS.—A cleared site near St. Mark's Church, Woodhouse, is to be used for the erection of a three-storey block of flats, served with lifts and built to a design of the Leeds Housing Director, Mr. R. A. H. Livett, A.R.I.B.A. Certain areas in Glasshouse-street, Leeds, are also to be reserved for three-storey flats. The Corporation invites tenders for the construction of a block of about 350 flats in Marsh-lane. Two new schools are to be built at Bramley and at Hawksworth, near Leeds, by the Education Committee. At Hawksworth a new senior school will be built and the existing school extended and converted for use as a junior school. A new senior school is also to be built at Bramley.

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender, that a fair wages clause shall be observed, that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender, unless stated to the contrary. The dates at the head of paragraphs are those for the submission of tenders: a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained. Abbreviations: (A.) for A.R.I.B.A.; B. of E. for Board of Education; B.C. for Borough Council; B.E. for Borough Engineer; B.S. for Borough Surveyor; C. for Clerk; C.B. for County Borough; C.C. for County Council; C.E. for County Engineer; C.S. for County Surveyor; D.S. for District Surveyor; E. for Engineer; E.C. for Education Committee; (F.) for F.R.I.B.A.; (L.) for L.R.I.B.A.; M.W.B. for Metropolitan Water Board; M.H. for Ministry of Health; M.T. for Ministry of Transport; P.C. for Parish Council; R.D.C. for Rural District Council; S. for Surveyor; T.C. for Town Clerk and Town Council; and U.D.C. for Urban District Council.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, &c.

NOVEMBER 28.

***Enfield U.D.C.**—Sports pavilion, café, etc., on playing fields, Cambridge-rd. Frank Lee (L.), 7, Little Park-gdns. Dep. £2 2s.

NOVEMBER 29.

***West Bromwich T.C.**—Maternity block at Hallam hospital. T.C. Dep. £2 2s.

NOVEMBER 30.

Aberdeenshire C.C.—2 blocks of 2 5-apartment houses, 3 blocks of 2 4-apartment houses, 3 blocks of 2 3-apartment houses, St. Combs housing site. Jenkins & Marr, architects, 3, Bon-Accord-cres., Aberdeen.

Church U.D.C.—Heating installation at Elmfield Hall, Gatty Memorial Park. S.

Clevedon U.D.C.—Iron and steel projection shelter on sea front. Inon J. Leach, S.

Gateshead.—20 flats and 336 houses at Highfield estate, for North Eastern Housing Association, Ltd. F. H. Patterson, B.S. Dep. £3 3s.

Hants (H.M.O.W.). — Brockenhurst Telephone Exchange. Room 65D, Third Floor, Office of Works, London, S.W.1. Dep. £1.

***Hertfordshire C.C.** — Boilerhouse, etc., at Cell Barnes Colony, nr. St. Albans. C. Dep. £2 2s.

Kesteven C.C.—House at Castle Bytham, for headmaster, on Holywell-rd. C. B. Metcalfe (F.), County Offices, Sleaford.

Lutterworth R.D.C.—4 houses at South Kilworth. G. Berridge, S.

Newcastle T.C.—Wall and floor tiling for new maternity units and connecting corridor in course of erection at General Hospital. City Architect, 18, Cloth-market.

Northamptonshire C.C.—Additions at Daventry public assistance institution. County Architect

Ruthin T.C.—Sub-station building, generating works. Electricity Dept. Sloan & Lloyd Barnes, consulting engineers, 34, Castle-st., Liverpool, 2. Dep. £1 1s.

Somerset (H.M.O.W.). — Keynsham Telephone Exchange. Room 65D, Third Floor, Office of Works, London, S.W.1. Dep. £1.

Sunderland C.B. — Six shops in one block on Plains Farm estate. B.E. Dep. £2 2s.

Uxbridge U.D.C.—Electric wiring in 850 houses. E. T. Bolton, E. and S., 263, High-st.

†Warwick R.D.C.—Three houses at Cressage and Harborough Magna. A. C. Bunch, County Architect, Warwick. Dep. £2 2s.

West Hartlepool C.B.—Installation of low pressure hot water, heating and hot water service apparatus in Dyke House senior elementary school. F. Durkin, B.E. Dep. £5.

DECEMBER 1.

Ashton-under-Lyne.—96 houses on Hurst Hall estate extension. W. Wilson, B.S. Dep. £2 2s.

Atcham R.D.C. — Three houses at Cressage and three at Picton. S., St. John's Hill, Shrewsbury.

Bathavon R.D.C.—2 pairs of semi-detached, 3-bedroom, non-parlour type houses on site at Tunley, Dunkerton. F. W. Kelway, S., 10, Green Park, Bath. Dep. £1 1s.

Bolton C.B. — Additions and rearrangement to boilerhouse buildings at generating station, Back o'th' Bank. H. E. Annett, M.I.E.E., Borough Electrical E. Dep. £1 1s.

Glasgow T.C.—Erection of St. Philomena's R.C. School, Garngad-rd. Education Offices (Property Department), 129, Bath-st., Glasgow, C.2. Dep. £1 1s.

Shepton Mallet.—Extensions, etc., to Isolation Hospital. Pictor & Snailum (F./A.), Abbey-chambs., Bath. Dep. £2 2s.

Stowmarket U.D.C.—16 bungalows at Ford View-rd. J. Black, S., 17, Station-rd. Dep. £2 2s.

***Surrey C.C.**—Sinking of a well or wells on site of new Central Laundry, Carshalton. C., Kingston-upon-Thames.

Walsall T.C.—Pay office, Countess-st. B.S. Dep. £3 3s

Westmorland C.C.—Brougham school house, repairs; Yanwath school house, repairs; Kirkby Stephen school house, repairs; Milburn school, electric lighting. A. Knewstubb, architect, St. Andrew's-chams., Penrith.

DECEMBER 2.

Border R.D.C.—24 houses, Corby Hill housing scheme. Housing Officer, 5, Victoria-pl., Carlisle.

Chatteris U.D.C.—Open-air swimming pool and necessary buildings in connection therewith in recreation ground, Wenny-rd. Solden Hipwell, S., 19, New-rd. Dep. £2 2s.

Nottinghamshire C.C.—Repairs to tarpaving at Basford County Institution. County Architect, Nottingham. Dep. £1 1s.

Spenborough U.D.C.—Painting and decorating work at Cleckheaton gas works. A. L. Jennings, engineer and manager, Gas Works, Cleckheaton.

Stevenston (H.M.O.W.).—Post office. Architect, H.M.O.W., 122, George-st., Edinburgh, 2. Dep. £1.

DECEMBER 3.

Anglesey E.C.—Additions and alterations to boys' sanitary block at Beaumaris County school. Architects' Department, Glanaber, Llangefni.

Brecon T.C.—Six houses at Maendu site. B.S., Steeple-la. Dep. £3.

Brixham U.D.C.—Pavilion, Church Castle Park, Higher Brixham. S. Dep. £1 1s.

Brynmawr U.D.C.—78 houses on Twyncyghordy housing site. S. Dep. £2 2s.

Bucks C.C.—Demolition of cottage and lean-to sheds at junction with Harrold-rd., Lavendon. Divisional Road Surveyor, 45, Bletchley-rd., Bletchley.

Chester C.C.—Heating and engineering service installation and electrical installation at Parkside Mental Hospital, Macclesfield. E. Griffiths & Son, 23b, The Temple, Dale-st., Liverpool. Dep. £20.

Edinburgh T.C.—Extension to cubicles of Turkish baths at Portobello Baths; painter work at pavilion and tractor shed, Craigentinny golf course; supplying and laying rubber flooring at Water Department Offices, Cockburn-st., and supplying and laying cork carpet at Water Department Offices, Cockburn-st. City Architect.

Egham U.D.C.—48 dwellings, Egham Hythe, E. and S. Dep. £2 2s.

Hampstead T.C.—Stores building. B.E. Dep. £2.

Holsworthy R.D.C. — Pair of houses in Milton Damerel, Chilsworthy, Pyworthy and Bridgerule. C. W. Parkes Lees & Son, architects and surveyors, 4, Broad-st., Launceston. Dep. £2 2s.

Irthlingborough U.D.C.—21 non-partlour type three-bedroom houses and 4 parlour type three-bedroom houses, adjoining Addington-rd. E. Turnbull, S. Dep. £2 2s.

Kettering T.C.—Ferro-concrete subway to Henry Gotch council school. J. P. Haugh, F.S.I., B.E. and S., 3, Gold-st. Dep. £2 2s

Merioneth C.C.—Demolishing of Cross Foxes Bach cottage, Dolgelley. H. E. Davies, C.S., Dolgelley. Dep. £2 2s.

Smethwick T.C.—18 houses, Abbey-rd.; 52 maisonettes, Stanhope-rd. B.E. and S. Dep. £2 2s. each.

Southampton C.B.—Four garages at Chapel Wharf. B.E. Dep. £2 2s.

Staffordshire C.C.—Extensions and alterations to district clerk's offices, Croft-st., Newcastle-under-Lyme. County Architect, Stafford. Dep. £2 2s.

West Riding C.C.—Lowering of walling and provision of wrought iron railings, approximate length 60 ft., at Giggleswick council school. E. J. W. Douglas, Divisional Clerk, Education Office, Settle.

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West Riding E.C.—Electric light installation at Goole Pasture-rd. school. E. L. Harrap, Education Offices, Goole.

DECEMBER 5.

Aberdeen T.C.—Public convenience at The Green. T. F. Henderson, City E.

Banstead U.D.C.—Approximately 265 yds. of wrought-iron fencing, together with ornamental gates, etc., at Woodmansterne recreation ground, Woodmansterne-st., Woodmansterne. S. Dep. £1 1s.

***Durham C.C.** — Additions to Boldon Colliery intermediate school. F. Willey (F.), 34, Old Elvet.

Durham C.C.—8 pairs of semi-detached cottages with drainage and road work at School Aycliffe, Heighington. T. Taliesin Rees & R. Holt, architects, 64, Rodney-st., Liverpool, 1. Dep. £3 3s.

East Ashford R.D.C.—Installing central heating apparatus at 8, Elwick-rd., Ashford, T. H. Wilde, S., 30, Albemarle-rd., Willesborough.

East Ashford R.D.C.—Alterations and additions to 8, Elwick-rd., Ashford, so as to adapt same for use as council offices. T. H. Wilde, S., 30, Albemarle-rd., Willesborough. Dep. £5.

Fife C.C.—22 houses at Lower Largo. Walker & Pride, architects, Church-sq., St. Andrews. Dep. £1 1s.

Glasgow (H.M.O.W.).—Alterations and adaptations at Home Office protective clothing store, Cotton-st., Bridgeton. Architect, H.M.O.W., 122, George-st., Edinburgh, 2. Dep. £1.

Huddersfield C.B.—Alterations at "Fieldhead" Lindley, into a nursery and erection of 2 blocks of children's homes. Geoffrey Haigh (L.), 10, John William-st. Dep £1 1s.

Llwchwr U.D.C.—40 houses. J. Teifion J. Walliams, architect, West-st., Gorseinon. Dep. £2 2s.

London (H.M.O.W.).—Internal painting at Bush House (South-West Wing, Strand). Room 65D, Third Floor, Office of Works, S.W.1. Dep. £1.

Newcastle-upon-Tyne.—Transit shed at No. 17 berth, Newcastle Quay. City E.

North Cotswold R.D.C. — Six houses at Aston Magna, nr. Moreton-in-Marsh. J. E. Busfield, S. Dep. £2 2s.

Northants (H.M.O.W.).—Oundle Telephone Exchange. Room 65D, Third Floor, Office of Works, London, S.W.1. Dep. £1.

Northern Ireland Government.—New R.U.C. barrack at Carrickmore, Co. Tyrone. Secretary, Ministry of Finance (Room 128), May-st., Belfast. Dep. £1.

Ormskirk U.D.C.—Steel-framed asbestos garage at Ormskirk depot, and enlargement of existing brick garage at Burscough depot. S. Dep. £1 1s.

Orrell U.D.C.—Internal painting and decorating of 100 council houses on Park-rd. estate. S.

Warrington.—Glazing, Sanitary Fittings, Wall and Floor Tiling and Terrazzo and Wood Block Flooring, admission hospital, Winwick. C., County Mental Hospital, Winwick. Dep. £1 1s. each.

West Riding C.C.—Installation of electric lighting in extensions at Hebden Bridge Grammar School. Education Officer, Wakefield.

West Riding C.C.—Improvements at Midgley Council school and installation of hot-water heating apparatus at Rawmarsh nursery school. Education Officer, Wakefield.

West Riding of Yorkshire C.C.—Infants' school at Whitwood Mere, Castleford. Education Officer, Wakefield.

West Riding C.C.—Veranda and improvements at Dearne, Bolton-on-Dearne council school. Education Officer, Wakefield.

West Riding C.C.—Installation of electric lighting in school and head teacher's house, Millhouse council school, Penistone. H. Lockwood, Divisional Clerk, Penistone.

West Riding C.C.—Boundary walls and asphalting to additional land at Worsborough Birdwell council school. Education Officer, Wakefield.

West Riding C.C.—Additions, etc., County Surveyor's divisional offices, Old Town Hall, Wetherby, West Riding Architect, Wakefield.

Wimbledon T.C.—12 flats and extensions to fire station, Queen's-rd. B.E. and S. Dep. £2 2s.

DECEMBER 6.

Consett U.D.C.—72 houses at Pont Head, Leadgate, and roadwork. J. J. Eltringham, Derwent-st., Blackhill. Dep. £2 2s.

Coventry T.C.—School at Stoke. Director of Education. Dep. £1 1s.

Glasgow (H.M.O.W.).—Installation of heating and ventilation at Home Office Protective Clothing Store, 8, Cotton-st., Bridgeton. E., H.M.O.W., 122, George-st., Edinburgh. Dep. £1.

Hayes and Harlington U.D.C.—Mortuary and other works. E. and S. Dep. £5 5s.

Heston and Isleworth T.C.—Infants' school at Berkeley-av. B.S., Council House, Hounslow. Dep. £2 2s.

Kilkenny Board of Health and Public Assistance.—Castlecomer, 48 cottages; Thomastown, 44 cottages, etc. Th. Kelly, consulting engineer, 35, Patrick-st., Kilkenny. Dep. £10.

Leek U.D.C.—Public conveniences in Ball Haye Green. J. A. Gilchrist, E. and S.

Leek U.D.C.—Two timber sports pavilions at Birchall playing fields, Cheadle-rd. J. A. Gilchrist, E. and S.

Leek U.D.C.—Additional lavoratory accommodation at Birch-gdns., Buxton-rd. J. A. Gilchrist, E. and S.

Loanhead T.C.—62 houses in 17 blocks on Hunter-av. site. G. B. Deas, architect, Central-chams., High-st., Kirkcaldy.

London (H.M.O.W.).—Biddulph Telephone Exchange; Linthwaite Telephone Repeater Station and Pontypridd Employment Exchange. Room 65D, Third Floor, Office of Works, London, S.W.1. Dep. £1 each.

Newton Abbott R.D.C.—22 sheds in 4-in. concrete blocks at Bovey Tracey, Ideford, Broadhempston. A. E. Stroud, clerk.

Sligo Corporation.—136 houses at Abbeyquarter (site No. 6) McDonnell & Dixon, (FF.), architects. 20, Ely-pl., Dublin. Dep. £5 5s.

Surrey C.C.—Wrought-iron fencing for Kingston by-pass road and trunk road, No. 6. C.E., Kingston-upon-Thames.

Watford T.C.—Community centre on Leavesden Green housing estate. B.E. Dep. £2 2s.

DECEMBER 7.

Basingstoke T.C.—Open-air swimming pool, buildings, drainage and other appurtenant works, War Memorial Park. W. G. A. Clark, B.S. Dep. £2 2s.

Camelford R.D.C.—Reconstruction and alterations to two cottages at Penny Crocker, Benney, St. Juliot. A. R. Hansford, S., Camelford.

Carshalton U.D.C.—Wooden Pavilion, Royston Park. E. and S., Stone Court, The Grove. Dep. £2 2s.

East Riding Mental Hospital.—Staff dining-room at nurses' home, Mental Hospital, Walkington, nr. Beverley. County Architect, Beverley. Dep. £3 3s.

Greencastle.—Celotex ceiling and various items of repairs and painting at Greencastle Catholic Church, Co. Tyrone, for Rev. Peter M'Geown, P.P., Greencastle. Vincent H. Murnaghan, B.E., Lisanelly House, Omagh.

Kempston (H.M.O.W.).—Extension to Telephone Exchange. Room 65D, Third Floor, Office of Works, London, S.W.1. Dep. £1.

Lakes U.D.C.—29 houses and roads, etc. T. Sowerby, C. Dep. £2 2s.

Lanchester R.D.C.—Installation of complete central heating system to Park House. S.

Peterborough T.C.—Works in connection with Cattle Market. City E.

Rahony, Dromore, Co. Tyrone.—Public elementary school, for Rev. Canon Clinton. R. B. Roe & Sons, Kingscourt, quantity surveyor, 17, Wellington-pl., Belfast. Dep. £3 3s.

***Wembley T.C.**—Installation of electric lighting, heating and power at Southern Fire Station, Harrow-rd. B. Treasurer, 117a, High-rd. Dep. £2 2s.

DECEMBER 8.

Leicester (H.M.O.W.).—Earl of Shilton Telephone Exchange. Room 65D, Third Floor, Office of Works, London, S.W.1. Dep. £1.

Manchester E.C.—W.I. railings and gates required at Whalley Range Municipal High School for Girls. Surveyor's Department, Education Offices.

Manchester E.C. — Old Hall-drive municipal senior school, and additions, etc., to existing school. S. Dep. £2 2s.

Manchester E.C.—Electrical installation on Mobberley boys' school, Mobberley. Surveyor's Dept., Education Offices, Deansgate.

Salisbury T.C.—12 dwellings at West Harnham. S. R. Little, Council House, Bourne Hill. Dep. £5.

Wembley T.C.—Panelling and Council Chamber Seating in new Municipal Buildings, Forty-ln. T.C. Dep. £1 1s.

DECEMBER 9.

Birkenhead C.B.—36 three-storey tenements off Quigley-st. B.E. and S. Dep. £2 2s.

Congleton R.D.C.—94 houses. W. Marsh, architect, Union Bank-chambs. Dep. £2 2s.

***Ealing T.C.** — West Greenford infants' school. B.E. Dep. £3 3s.

Hinckley (H.M.O.W.).—Employment Exchange Room 65D, Third Floor, Office of Works, London, S.W.1. Dep. £1.

Portsmouth T.C.—135 flats, Church Path North. Adrien J. Sharp (L.). Dep. £3 3s.

Wexford T.C.—Timber and joinery work, slates and plaster, glazing materials, ironmongery, sanitary fittings, etc., for 14 houses at William-st.; 8 bungalows at Davitt-rd. North, and fire station at Davitt-rd. North. J. J. Byrne, Town C.

***Wrexham E.C.**—Additions, etc., to Acton-pk. schools. B.S., 1, Grosvenor-rd. Dep. £2 2s.

DECEMBER 10.

Hereford T.C.—Sectional framed building. City S.

Millom D.C.—Children's paddling pool and public shelter and lavatories on Haverigg pleasure ground. W. N. Kitchin, Clerk, 11, St. George's-ter.

Morecambe and Heysham T.C.—Shelter and conveniences, Marine-rd. West. B.S. Dep. £3 3s.

***Nottinghamshire C.C.**—County Hall and Offices at Trent Bridge. C. Dep. 25 guineas.

Sligo E.C.—Technical school. Vincent Kelly, architect, 87, Merrion-sq., Dublin. Dep. £5 5s.

Southend-on-Sea T.C.—5 cottages for aged persons at Gainsborough-dr. B.E. Dep. £1.

Sutton Coldfield T.C.—Alterations and extensions at Corporation Highways depot, Riland-rd. B.S. Dep. £2 2s.

Warminster and Westbury R.D.C.—Hinton, 2 houses; Keevil, 2 houses. Terence W. Snailum (A.), Church-st., Trowbridge. Dep. £2 2s.

West Riding E.C.—Additional offices at Grimethorpe (Girls') Council School. C. L. Crossley, 8, St. John's North, Wakefield.

Whitby U.D.C.—Exterior painting work at Isolation Hospital, Stainsacre-la. E. and S.

DECEMBER 12.

***Beaminster R.D.C.**—6 houses with paths and fencing at Melplash. C. Dep. £1 1s.

***Coventry T.C.**—170 houses and 170 toolsheds on Pinley Fields estate. A. F. Underhill (L.). Dep. £3 3s.

***Derby T.C.**—Boundary fencing at Infectious Diseases Hospital and Sanatorium. C. H. Aslin (F.). Dep. £1 1s.

***Dunstable T.C.**—3 cottages in Watling-st. W. F. Wilkins, B. Architect. Dep. £2 2s.

***Durham C.C.** — Consett Secondary school in Black Fyne-rd., Blackhill. F. Willey (A.), 34, Old Elvet.

Durham C.C.—Additions, Houghton-le-Spring secondary school. F. Willey (F.), 34, Old Elvet, Durham.

†**Durham C.C.**—Alterations, Silksworth intermediate council school. F. Willey (F.), 34, Old Elvet, Durham.

Gateshead C.B.—Heating installation in connection with South Dene Towers. Cairns & Byles, consulting engineers, 21, Ellison-pl., Newcastle-upon-Tyne, 1. Dep. £2 2s.

***Grimsby T.C.**—Infants' school at Nunsthorpe. G. H. Turner, 38a, Louth-rd., Scartho. Dep. £2 2s.

***Hexham R.D.C.**—6 houses at Humshaugh. C.

***Leicester T.C.**—36 houses. Chairman of Housing Committee. Dep. £2 2s.

Tendring R.D.C.—14 cottages, Great Oakley. F. G. Vincent-Brown, architect, Dovercourt Bay. Dep. £2 2s.

***West Riding of Yorkshire C.C.**—Heating and fencing at Ecclesfield Town senior school. Education Officer, Wakefield.

***West Riding of Yorkshire C.C.**—Senior School and Technical Institute, etc., at Bingley, nr. Bradford. Education Officer, Wakefield.

DECEMBER 13.

***Bristol T.C.**—Building works in connection with modifications to H.T. switch-houses, Portishead generating station. A. J. Newman, Colston-av. Dep. £2 2s.

***Essex C.C.**—Extensions to County High School, Wanstead, and erection of School at Upminster. J. Stuart (F.), County Architect, Chelmsford. Dep. £2 2s. each.

Huddersfield C.B. — Bowling green pavilion at Leeds-rd. playing fields. B.E. and S., High-st., bldgs.

***London (M.W.B.).**—11 cottages and other works at Balaclava-rd. and Fleece-rd., Surbiton. Chief E., Room 201, 173, Rosebery-av., E.C.1. Dep. £10.

Nottingham T.C.—Additions to Sneinton Dale council school. R. M. Finch, M.Inst.C.E., City E. and S. Dep. £2.

***Stafford C.C.**—School at Butterton, nr. Leek. Director of Education. Dep. £3 3s.

Tenby T.C.—29 houses, with appurtenant roads, footpaths and sewers, on site of Lower Knowle Park and road entrance. B. Morley, B.S. Dep. £3 3s.

DECEMBER 14.

***London (H.M.O.W.).**—Extensions to Bolton Head Post Office and St. Margaret's Bay Telephone Repeater Station. Room 65D, Third Floor, Office of Works, S.W.1. Dep. £1 each.

Portlaoighise District Mental Hospital.—Residence for Clerk, on hospital grounds adjoining Dublin-rd. P. J. Sheahan, architect, 47, O'Connell-st., Limerick. Dep. £10 10s.

***Southwell R.D.C.**—4 houses at Caunton and 4 houses and 4 bungalows at Sutton-on-Trent. S. Cooper, S., 8, Westgate. Dep. £1 1s. each.

DECEMBER 15.

Leicester T.C.—Block for 60 female patients, one pair of staff cottages and farm bailiff's house at institution, Groby-rd. Pick, Everard, Keay & Gimson, architects, 6, Millstone-la., Leicester. Dep. £2 2s.

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Norwich T.C.—Technical College of Art and Crafts at Ipswich-rd. City Architect. Dep. £5 5s.

South Shields C.B.—Infectious Diseases Hospital at Sunniside-ln., Cleadon. John Reid, B.E. Dep. £5 5s.

Warrington T.C.—Conveniences, boundary dwarf wall and railings. J. Y. Hughes, B.E. and S. Dep. £2 2s.

DECEMBER 16.

Hertfordshire C.C.—Reconstruction of Ware Park Sanatorium. C.

***Romsey T.C.**—22 houses and other works on Alma-rd. housing site. B.S. Dep. £2 2s.

DECEMBER 17.

Doncaster and Mexborough Joint Hospital Board.—Extensions to Isolation Hospital, Crookhill-rd., Conisbrough. Roy Bowers, clerk, Nether Hall, Doncaster. Dep. £2 2s.

Dun Laoghaire.—Heating and electrical installations at new extensions to St. Michael's Hospital. N. Mathews, E., 104, Grafton-st., Dublin. Dep. £3 3s.

***Durham C.C.**—Conversion of Stanhope Poor Law Institution into Convalescent Home. County E., 20, Old Elvfiet.

***Oldham T.C.**—224 houses, Stoneleigh No. 2 housing scheme. Deputy B.E. and S. Dep. £2 2s.

Staffordshire C.C.—Court house at Cannock. County Architect, Stafford. Dep. £2 2s.

DECEMBER 19.

†**Durham C.C.**—New secondary school at Crossgate Moor. F. Willey (F.), 34, Old Elvet, Durham.

***Maidstone T.C.**—101 houses and Flats, Coombe Farm Housing Estate extension. B.S.

DECEMBER 20.

***Newport T.C.**—Main municipal block of civic centre scheme. T.C. Dep. £5.

DECEMBER 29.

Somerset.—Two hard tennis courts and pair of cottages at Somerset and Bath Joint Mental Hospital. C. Cotford, nr. Taunton. Dep. £1 1s. for cottages.

DECEMBER 31.

Liwchwr U.D.C.—New boardroom at the Council offices at West-st., Gorseinon. E. Harris, C. Dep. £2 2s.

JANUARY 3, 1939.

***Chester T.C.**—89 houses and 24 flats on Lache Housing Estate. E. and S. Dep. £2 2s.

NO DATE.

Castleford.—Installation of electric lighting, in Church-st. Council school. M. G. Swaine, Education Offices, 97, Smawthorne-ln., Castleford.

***Chester.**—Demolition of Wepre Hall, Connah's Quay, Flintshire. Drivers, Jonas & Co., St. Peter's-churchyard, The Cross.

Cleator (Cumberland).—New buildings at Cleator, nr. Whitehaven. T. Milnes-Foden & Ptnrs., Century-bldgs., 199, Deansgate, Manchester.

Llanelly.—Extensions to Central Café. J. & B. E. Evans (L. and A.), Llanelly.

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NOVEMBER 30.

Birmingham T.C.—Sanitary fittings for Highbury Home. H. J. Manzoni, City E. and S. Dep. £2 2s.

Newcastle-upon-Tyne.—Sanitary fittings for reconstruction of flats in St. Lawrence-sq. City Architect, 18, Cloth Market.

Newcastle-upon-Tyne.—Ranges, fireplaces, sanitary fittings, hardware and electrical installation for 142 houses at Low Willington, Wallsend, for North-Eastern Housing Association, Ltd. Percy L. Browne and Son & Harding, chartered architects, Pearl-bldgs., Northumberland-st., Newcastle-upon-Tyne. Dep. £1 1s.

Stockport C.B.—Water E.

DECEMBER 1.

Chichester R.D.C.—Spun-iron pipe, with sluice valves and fire hydrants. S., East Pallant House.

Monmouthshire C.C.—S. A. Bennett, C.S., Newport (Mon).

Rhondda U.D.C.—360 tons of cast-iron pipes; approximately 800 lin. yds. reinforced concrete pipes. E. Taylor, E. and S.

DECEMBER 3.

Keysham U.D.C.—S.

Wilts C.C.—H. S. Ganderton, C.S., Trowbridge.

DECEMBER 5.

Dorset C.C.—C.S., Dorchester.

South Africa (South African Railways and Harbours Administration).—Steel wire ropes. Dept. of Overseas Trade, S.W.1.

DECEMBER 7.

Droylsden U.D.C.—Surface dressing of approx. 10,000 super yds. of roads with refined tar or other approved compound. F. Schofield, S.

***Easington R.D.C.**—C.

***Edmonton and Enfield Joint Managers.**—Furniture and fittings at Durants Special School, Old-rd., Enfield Highway. Frank Lee (L.), "Percy House," 7, Little Park-gdns. Dep. £2 2s.

ENGINEERING, IRON AND STEEL.

NOVEMBER 30.

Ayr C.C.—For Garnock Valley drainage. J. B. Brodie, consulting engineer, 141, West George-st., Glasgow.

Durham R.D.C.—For Aldin Grange sewerage. Taylor & Wallin, engineers, 1, Saville-pl., Newcastle-on-Tyne, 1. Dep. £5.

Hartlemere R.D.C.—3,700 yds. of 9 in. and 6 in. sewers and appurtenant works, construction of sewage disposal works, at Laxfield. W. Herbert Bateman, E., St. Michael's-chambs., St. Andrew-st., Norwich. Dep. £2 2s.

Hartlemere R.D.C.—Laying of house drains, construction of septic tank and other appurtenant works at 16 council houses, parish of Worlingworth. H. Austin Reeve, Housing Inspector, Lambseth-st., Eye.

Lancashire C.C.—Widening and reconstruction of boundary (county) bridge on Southport-Ormskirk-rd., over Boundary brook, Scarisbrick, Southport. County Surveyor and Bridgemaster, County Offices, Preston. Dep. £2.

Lincoln T.C.—Reconstruction of Magpies Bridge over River Witham, City E. and S. Dep. £2.

South African Railways and Harbour Administration.—Structural steelwork, including columns, crane girders, sheeting rails, etc., required for an extension to timber store at Uitenhage. Department of Overseas Trade, S.W.1.

South Cambridgeshire R.D.C.—Standpipes and supply and laying of lead service connections and appurtenant works from cast-iron water mains to boundary of properties, for Western Area Water Scheme, contract No. 7. Sands & Walker, consulting E., Milton-chams., Milton-st., Nottingham.

DECEMBER 3.

Crook and Willington U.D.C.—Main sewerage and sewage disposal. D. Balfour & Sons, consulting engineers, 3, St. Nicholas-bldgs., Newcastle-on-Tyne. Dep. £5.

Leicester T.C.—Sewage disposal works extensions (Contract No. 4). A. T. Gooseman, City E. and S. Dep. £2.

Tredegar U.D.C. — Flood prevention schemes. Wallace A. Evans, Consulting E., 86, Claude-rd., Cardiff. Dep. £5.

DECEMBER 5.

Norwich T.C.—Structural steelwork (approximately 30 tons) for new boilerhouse, Hellesdon Mental Hospital. City Architect.

DECEMBER 6.

Colchester T.C.—Driving of approximately 100 tons of steel sheet piling, excavating and carting 5,500 cu. yds. of river bank, and other works incidental thereto, at River Colne. H. Collins, Borough Engineer and Harbour Engineer. Dep. £3 3s.

DECEMBER 7.

Banff C.C.—Construction of sea wall in connection with road widening at Shore-st., Macduff. Archibald Henderson, 21, Bridge-st., Aberdeen.

Lancashire C.C.—New road, from Liverpool-East Lancashire trunk road, at Windle Smithies to Four Lane Ends, Bickerstaffe, including construction of new potteries bridge, and new Rainford bridge. P. Schofield, County Surveyor and Bridgemaster, Preston. Dep £5 5s.

Staffordshire C.C.—Reconstruction of Rodbaston railway bridge, near Gailey, on Wolverhampton-Stafford-rd. C. S. Stafford. Dep. £5.

DECEMBER 8.

Birmingham T.C.—Wilton-rd. widening and strengthening of bridge over River Tame; Fox Hollies-rd., Hall Green: widening and reconstruction between School-rd. and Stratford-rd. and construction of foul and storm water sewers in School-rd. and Fox Hollies-rd.; West Boulevard and Tennal-ln., Harborne: widening and reconstruction between Blandford-rd. and Tennal-rd. and construction of storm water sewer in Tennal-ln.; Barrows-ln. and Garretts Green-ln. (between Barrows-ln. and Bilton Grange-rd.), Yardley: widening and reconstruction and construction of storm water sewers Barrows-ln.; Sheaf-ln. and Horse Shoes-ln., Sheldon: widening and reconstruction. H. J. Manzoni, City E. Dep. £2 each.

Glanford Brigg R.D.C.—Water supply to Alkborough and other parishes (Contracts Nos. 1-4). John H. Haiste, Consulting E., Middleton-chambs., Lowgate, Hull. Dep. £2 2s. each contract.

Glanford Brigg R.D.C.—Water supply for Kirton Lindsey (Contracts Nos. 7 and 8). John H. Haiste, Consulting E., Middleton-chambs., Lowgate, Hull. Dep. £1 1s.

Ruabon.—Steelwork for reconstruction and widening of Wrexham-rd. bridge, for G.W.R. Engineer, Paddington Station, London, W.2. Dep. £2 2s.

DECEMBER 9.

Belfast City and District Water Commissioners.—Filter-house and covered reservoirs. W. I. Quinn, secretary. Dep. £5 5s.

DECEMBER 10.

Ballinasloe Mental Hospital.—Board of Management water supply scheme. J. R. Boyd Barrett, chartered architect, 61, South Mall, Cork. Dep. £10 10s.

Breconshire C.C.—Reconstruction of section of Brecon-Llandovery-rd., nr. Cefn-y-Parc, about 2¼ miles from Brecon. J. M. Richards, C.S., County Offices, Watton, Brecon. Dep. 10s.

Calne and Chippenham R.D.C.—Elevated reinforced concrete water tower. Parker Pearson & Ross Hooper, engineers, Dallas-chambs., Chippenham. Dep. £1.

Morecambe and Heysham T.C.—Sea defence works and promenades, on Marine-rd. West. B.S. Dep. £5 5s.

DECEMBER 12.

Basford R.D.C.—For Costock and East Leake sewerage and sewage disposal works. J. J. Ellis, E.S. and Housing Architect, Rock House, Stockill-ln. Dep. £5 5s.

ROAD, SEWERAGE AND WATER WORKS.

NOVEMBER 30.

Dublin T.C.—314 lin. yds. of galvanised corrugated sheet-iron fencing, with standards and gate, at Drumcondra. City E., 28, Castle-st.

Edinburgh T.C.—Macadamised carriageway and footpath of Wishaw-ter., extending from London-rd. northwards to Marionville-rd. City E., 329, High-st.

Lewisham B.C.—Paving and forming roadway and footways of Algiers-rd. (part of). B.E. and S.

Luton T.C.—Construction of Dunstable-cl., Dunstable Close-passage, St. Luke's-cl. and Leicester-rd. J. W. Tomlinson, B.E. and S. Dep. £2 2s. each road.

Newcastle-Emlyn R.D.C.—Extension of water main from Gwargate, Cwmann, to Blaenmaes, length being 1,300 yds. J. Owen Parry & Lewis, consulting engineers, Ammanford. Dep. £1 1s.

Reigate T.C.—Reconditioning of certain lengths of existing egg-shaped brick sewers in Borough. G. B. Kershaw & Kaufman, chartered civil engineers, 9, Victoria-st., S.W.1 Dep. £10.

Tavistock U.D.C. — Laying of length of sewer, about 150 yds., in King-st. J. N. Singleton, chartered surveyor, Drake-rd.

DECEMBER 1.

Carmarthen C.C.—7,100 super. yds. bituminous macadam base coat on Carmarthen-Whitland Trunk-rd. T. W. Wishlade, C.S., Carmarthen.

Greenwich B.C.—Forming and paving of Langton-way, extending from Delacourt-rd. to Vanbrugh-ter. B.E. and S.

Leeds T.C.—Kerbing, flagging and tarpaving footpaths and carriageways in Station-av., Middleton-rd., Hollyshaw-ln., Weetwood-ln., and Middleton, Dewsbury-rd. Herbert G. Firth, Highways E., 155, Kirkstall-rd. Dep. £1 1s.

London (City Corporation).—Reconstruction of 580 ft. of brick sewer beneath Threadneedle-st., and construction of 120 ft. of brick sewer beneath Bartholomew-ln., and contingent works. E., Guildhall, E.C.2. Dep. £2 2s.

Westmorland C.C.—Installation of new water closets, drainage and outfall works, and 500 yds. of 1 in. galvanised water supply pipe, at Wickersgill school. A. Knewstubb, architect, St. Andrew's-chams., Penrith.

Wilton T.C.—Repairs to Hollows-rd. J. T. David, B.S.

DECEMBER 2.

Falkland T.C.—Demolition of buildings, formation of streets and laying of sewers, and water mains proposed in connection with erection of housing scheme of 24 houses. A. D. Haxton (L.), Commercial-rd., Leven.

DECEMBER 3.

Bexhill T.C.—Making-up Chantry-av. and Arthur-rd (part). Acting B.S. Dep. £1 1s.

Bridgnorth T.C.—Laying of approximately 1,000 yds. of 3-in. cast-iron water main in parish of Quatford. B.S. Dep. £2 2s.

Larne U.D.C.—Laying 47 lin. yds. of 4 in. water main to connect Glynn-rd. and Circular-rd. mains, and provision and fixing of hydrant in Main-st. J. M. O'Brien, clerk.

Lytham St. Annes Corporation.—Making-up of various roads in the borough. B.S.

Middlesex C.C.—Service road at junction with Bullsmoor-ln. J. G. Bell, M.C.C. Depot, Long-ln., Finchley.

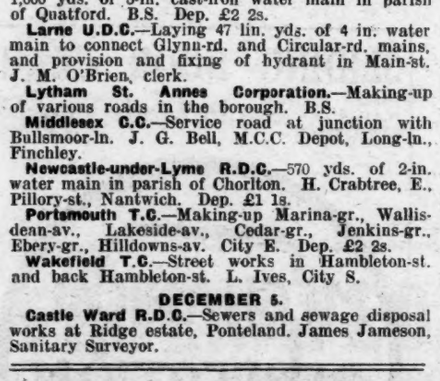
Newcastle-under-Lyme R.D.C.—570 yds. of 2-in. water main in parish of Chorlton. H. Crabtree, E., Pillory-st., Nantwich. Dep. £1 1s.

Portsmouth T.C.—Making-up Marina-gr., Wallisdean-av., Lakeside-av., Cedar-gr., Jenkins-gr., Ebery-gr., Hilldowns-av. City E. Dep. £2 2s.

Wakefield T.C.—Street works in Hambleton-st. and back Hambleton-st. L. Ives, City S.

DECEMBER 5.

Castle Ward R.D.C.—Sewers and sewage disposal works at Ridge estate, Ponteland. James Jameson, Sanitary Surveyor.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Clitheroe R.D.C.—Laying of approx. 400 yds. of 6-in. surface-water drain (with the necessary road gullies, grates, etc.) and forming of approx. 310 yds. of tarmacadam footpath and kerbing in Back-ln., Chatburn. W. G. Booth, S.

Gateshead C.B.—9-in. to 18-in. sewers in concrete and stoneware pipes (length approximately 519 yds.) at Sheriff Hill. F. H. Patterson, B.E.

Haslemere U.D.C. — Making-up Eight Acres Estate-rd. C. A. Best, S. Dep. £1 1s.

Orpington U.D.C.—Making-up of Cranleigh-close. T. Watson, E. and S. Dep. £3 3s.

Pembrokeshire C.C.—Road-widening scheme from Trecwn village to Rectory cross-roads. C.S., Willesden House, Haverfordwest. Dep. £5 5s.

Thurrock U.D.C.—Making-up of Medina-rd., Little Thurrock. G. F. Andrassy, E. and S., Grays. Dep. £1 1s.

DECEMBER 6.

Camelford R.D.C.—New sewers, connecting to existing, and construction of new outfall works at Delabole and St. Teath. Andrew & Randell, engineers, St. Austell. Dep. £2 2s.

Carmarthenshire C.C.—Proposed road improvements at Cwmffrwd corner, Tredegar farm, Llwynycwcw, on Carmarthen-Llanelly-rd. T. W. Wishlade, C.S., Carmarthen. Dep. £5.

DECEMBER 7.

Bedford T.C.—Making-up Brookfield-rd. (southern part). C. H. Blakeway, B.E. and S., Horne-ln., Bedford. Dep. £1.

Cardiff R.D.C.—100 lin. yds. of new street at council's housing scheme, Heol Booker, Velindre, Whitchurch. W. Farrow, E. and S., 20, Park-pl.

Droylsden U.D.C.—Surface dressing of approximately 10,000 super yds. of roads with refined tar or other approved compound. F. Schofield, S.

Llanelly T.C.—Street improvement works in Stebonheath-ter., Greenway-st., Greenway-st., South Back-st., Salem-rd. (part of). B.E. Dep. £2.

Public Appointments.

NOVEMBER 28.

Croydon T.C.—Draughtsman (Temp.). T.C.

London. — Quantity Surveyors (Temp.). Chief Superintendent, Ordnance Factories (Advt. No. 248), Royal Arsenal, S.E.18.

NOVEMBER 29.

Leamington Spa T.C. — General Engineering Assistant. B.E.

Lowestoft T.C.—Building Inspector. T.C.

NOVEMBER 30.

Bexley T.C.—Two Architectural Assistants and one General Engineering Assistant (Temp.). B.E. and S.

Esher U.D.C.—Junior Assistant. H. C. Fread (F.).

Heston and Isleworth T.C.—Building Maintenance Foreman. B.S., Hounslow.

DECEMBER 2.

***Exeter T.C.**—Architectural Assistant (Temp.) John Bennett (F.), City Architect.

Leeds T.C. — Senior Architectural Assistant. R. A. H. Livett (A.), Director of Housing, 26, Gt. George-st.

Leeds T.C. — Quantity Surveyor's Assistant (Temp.). R. A. H. Livett (A.), Director of Housing.

DECEMBER 5.

***Crewe T.C.**—Architectural Assistant and Engineering Assistant. T.C.

***Gateshead T.C.**—Heating Engineering Assistant. B.E.

***Southampton C.C.**—Assistant Quantity Surveyor. C.S., Winchester.

DECEMBER 7.

Gloucester E.C.—Clerk of Works. Education Officer.

***Southampton C.C.** — Senior Architectural Draughtsmen and Junior Architectural Draughtsmen. County Architect, Winchester.

DECEMBER 9.

***Essex C.C.**—Architectural Assistants. J. Stuart (F.), County Architect, Chelmsford.

***Gloucestershire C.C.**—County Architect. C.

***Leicester T.C.**—Assistant Lecturer in Architecture. Director of Education.

DECEMBER 12.

***West Riding of Yorkshire C.C.**—Clerk of Works (Temp.). A. L. Binns, Wakefield.

***West Riding of Yorkshire C.C.**—Quantity Surveying Assistants. Education Officer, Wakefield.

DECEMBER 14.

***Bury T.C.**—Clerk of Works. T.C.

NO DATE.

***Durham C.C.**—Assistant Architect and Architectural Assistant. F. Willey (F.), 34, Old Elvet.

***London County Council.**—Technical Assistants (Temp.). Architect, County Hall, Westminster Bridge, S.E.1.

***London.**—Civilian Garrison Engineer. Chief Engineer, Eastern Command, Horse Guards, Whitehall, S.W.1.

***London (H.M.O.W.).**—Assistants (Temp.). Chief Maintenance S. (B.1), Room 65A, Third Floor, Office of Works, S.W.1.

***London.**—Quantity Surveyors. Under-Secretary of State, Air Ministry (W.9), Adastral House, W.C.2.

***London.**—Architectural and Engineering Assistants. Under-Secretary of State, Air Ministry (W.9), Adastral House, Kingsway, W.C.2.

***London.**—Assistant Quantity Surveyors (Temp.). Civil Engineer-in-Chief, Admiralty, S.W.1.

***London.**—Probationer Clerks of Works. Under-Secretary of State, Air Ministry (W.9), Adastral House, Kingsway, W.C.2.

CURRENT AND PROPOSED BUILDING WORK*

The Editor welcomes authentic information for this feature from architects, surveyors or contractors. Where business representatives cannot be seen personally at this stage, this should be mentioned. Items should reach 4, Catherine-street, Aldwych, W.C.2, not later than Wednesday morning.

Bangor.—Council of University College of North Wales, propose gymnasium, squash and fives courts on land adjoining existing college buildings. Architect, Ivor Davies (L.), Yorkshire-chamb. Tenders to be shortly invited.

Barnsley.—Miners' Welfare Central Fund Committee propose pithead baths, Wombwell Main Colliery. Plans by J. H. Forshaw (F.), Chief Architect, Romney House, Marsham-st., S.W.1.

Barnstaple.—Governors of North Devon Infirmary propose nurses' hostel and reconstruction existing building as ward block. Plans by J. C. Southcombe (L.), National Provincial Bank-bldgs., Cross-st.

Basingstoke.—T.C. approved:—Factory extension at Worthing, for Auto Tyre Services, Ltd.—amended lay-out for 84 semi-detached houses at Bramblys Grange estate, for H. Miller & Co.

Battersea.—B.C. approved drainage plans:—Sherwood Wharf, Chatfield-rd.—P. C. Organ, on behalf of Organ & Co., Ltd., alterations and additions.

Bishop Auckland.—Two factories erected on St. Helen's estate by North-Eastern Trading Estates, Ltd., Gateshead, destroyed by fire. Damage £30,000

Bromsgrove. — U.D.C. approved plans:—Rebuilding "Golden Cross" Inn, Birmingham-rd., Marlbrook, for Showell's Brewery, Ltd., Burton-on-Trent.

Cannock.—Cannock Agricultural Co., Ltd., propose warehouse on Walk Mill-ln., Bridgtown. Architects, Wood & Goldstraw, Victoria-chambs., Station-st., Tunstall.

Carmarthen.—J. & B. E. Evans, 34, Stepney-st., Llanelly, prepared plans for bakery and stores, Friar's-pk.

Congleton.—Trustees of National Children's Home and Orphanage, 25, Highbury Park, London, N.5, propose boys' school. Architect, G. H. Herring, 21, Milton-rd., Harpenden

Darfield.—Barnsley Brewery Co., Ltd., Oakwell Brewery, Barnsley, propose £10,000 hotel at Nanny Marr; plans in architects' department.

Darlington.—Mauchlen & Wightman, 12, Saville-row, Darlington, prepared preliminary plans for drill hall, Neasham-rd., for Territorial Army.—Church hall proposed in Yarm-rd., for Church Council of Haughton-le-Skerne, architect, J. Clayton, High Row-chambs.—C. Newman, Ltd., proposes garage and showroom, Coniscliffe-rd. Plans by J. Clayton, High Row-chambs.

Ealing.—T.C. received plan from E., of G.W.R. for widening and lengthening of bridge over railway at Eastcote-ln. Cost, £15,260.—Plans passed:—factory and office (amended plan) Long-dr., for Allnatt, Ltd., Chase estate, Park Royal-rd., N.W.10; laboratory annexe for J. Nathan & Co., Ltd., at Glaxo laboratories, Greenford-rd., Wallis, Gilbert & Partners, 15, Elizabeth-st., S.W.1, architects; 30 garages, Cavendish-av., for Lucas Estates (1933), Ltd., Marshall and Tweedy (FF.), 96, New Cavendish-st., W.1, architects; factory and office (lay-out only) between Conyngham Cottage and Wolf's factory, Hanger-ln., for Percy Milton Properties, Ltd., 113, Park-st., W.1; additions to workshops, showroom with 3 flats over at Popes-ln., for R.E.A.L.L. Carriage Works, Ltd., Popes-ln., W.5.

Gateshead.—Warehouse proposed, rear of Thompson's Red Stamp Stores, Ltd., Durham-rd., to plans by J. N. Fatkin, 17, Bigg-market, Newcastle-on-Tyne.—J. H. Morton & Sons, Martins Bank-chambs., Fowler-st., South Shields, prepared plan for factory, Team Valley Trading estate (Seventh Avenue), for North-Eastern Trading Estates, Ltd.

Golborne.—U.D.C. approved plans: Houses, Church-ln., Lowton, for Earlestown Industrial Co-operative Society, Ltd. Plans by own staff, Earle-st., Newton-le-Willows.—Garage and stores in Silcock-st., for Lancashire Electric Power Co., Ltd. Plans by own staff, National-bldgs., Blackfriars, Manchester, 3.

Greenwich.—B.C. approved:—Sports pavilion, Siemen's sports ground, Charlton Park-ln.; shops and flats, Trafalgar-rd., Tuskar-st. and Mell-st.

Hebburn-on-Tyne.—Extensions to be made at works of Bushing Co., Ltd. Cackett, Burns Dick & MacKellar, Ellison-pl., Newcastle, architects.

Hemsworth.—C. Nicholson, builder, Grimethorpe, proposes 40 bungalows at Grimethorpe, near Barnsley. Plans approved by R.D.C.

Holborn.—B.C. recommend clearance of area known as New North-st. (north).

Huyton.—U.D.C. approved plans: 100 houses, Milton-av., and roads ("B," "M" and "E"), Thingwall Farm estate, Paramount Estates, Ltd., Mill Estate, Roby; 20 houses, Swanside-av., Davies & Williams, Pilch-ln., Huyton; 5 shops and houses, Kingsway, Rupert Farm Estate, T. Percy; 4 shops and houses, junction of Derby-rd., Huyton Hey-rd., R. Jones, Heaton Park estate Catholic Church of St. Columba, Woolfall Heath estate, for Diocesan Board.

Kidderminster.—Plans being prepared for County Mental Defective Colony. Accommodation for 1,000 at Cookley, for West Midlands Joint Board for Mentally Defectives.

Kidderminster.—T.C. approved: Kidderminster Co-op. Society, dairy, Franche-rd.; F. Martin, rebuilding new inn, Stourbridge-rd.

Kingswood.—A scheme for extending Mangotsfield isolation hospital at between £10,000 and £12,000, and establishing joint accommodation for Thornbury, Mangotsfield, Sodbury, Warmley and Kingswood areas agreed in principle by U.D.C.

Lambeth. — B.C. approved:—W. H. Scanlan, additional storey to garage, 88-90, Wandsworth-rd.; Spicers, Ltd., single-storey office on site of Spicer's Garage, Great-st.—Drainage plans passed:— Unit Construction Co., Ltd., Courtney & Fairbairn, Ltd., L.C.C. flats, Bolney-st., Block No. 9; maternity and child welfare department, Annie McCall Hospital, Jeffrey-rd.

Lewisham.—B.C. approved: M. J. Gleeson, Ltd., 12 lock-up garages at rear of "The Elms," Belmont Hill, Lewisham; Dunsmore Bros., one-storey building at rear of 2-6a, Wastdale-rd., Forest Hill; H. F. G. Brady, garages on site of Hurst Cottages, Loampit Vale, Lewisham; S. B. Porteous, 2 2-story buildings, each comprising 4 flats, at 20, Honor Oak-rd., Forest Hill; H. Macintosh, houses and garages in Liphook-cres., Forest Hill; D. Smith, Oakley & Garrard, lay-out and building line at corner of Whitefoot-ln. and Bromley-rd., Catford.

Lincoln. — Governors of Moulton Grammar school propose senior school, at £14,480; architect, T. F. Trower (L.), Elsom House, Broad-st., Spalding.

London (City).—Corporation recommend £3,000 for repairs to insulation of premises of Union Cold Storage Co., Ltd., and to substructure of London Central Markets, caused by leakage of water from main.

London. — L.C.C. recommended borrowing by B.C.'s as follows:—Greenwich, £20,000 for Cherry Orchard estate housing; Hackney, £1,050 for Essex-st. depot; Islington, £7,920 for Highbury-pk. housing, and £17,000 for Canonbury housing; Kensington, £27,000 for High-st.; and Westminster, £284,000 for Marsham-st. improvement.—C.C. recommend £545 for improvements to Wilson's grammar school, Camberwell; £5,600 for re-wiring of electrical installation at Hutton residential school, Essex; £166 for repairs North-Eastern hospital, South Tottenham; £700 for dressing-rooms at Oxleas Wood, Woolwich.

Long Eaton.—Showrooms and offices, Market-pl., for Long Eaton Gas Co. proposed. Plans by J. F. Dodd & W. Wilcox, 2, Waverley-st. No contracts let.

Manchester.—Plans approved by T.C.: 40 houses, Windsor-rd. and Windsor-cres., Crumpsall, J. G. Whitelegge, Sheepfoot-ln. Estate, Heaton Park.

Middlesbrough.—Plans before T.C. for Regent Dwellings, Ltd., embracing 112 houses proposed for Town Farm, Cargo Fleet.

Mirfield.—H. Wooller & Son, builders, Church-rd., Roberttown, Liversedge, propose 48 houses, Sunnybank-rd.

Murton.—No contracts are yet placed for the rebuilding of second section of Murton Victory Club. Tenders obtained. Plans by C.W.S. Architects' Dept., 90, Westmorland-rd., Newcastle-on-Tyne.

Newcastle-on-Tyne.—Plans prepared by R. Burke, Singleton House, Northumberland-rd., for rebuilding bakery in Pitt-st., for J. M. Dickman, 60, Pitt-st.—R. Deuchar, Ltd., 146, Sandyford-rd., are to rebuild "Bay Horse" Inn, Westgate-rd., to plans by S. H. Lawson, Emerson-chambs.—T. A. Page, Son & Bradbury, 75, King-st., South Shields, prepared plans for extensions in Portland-rd., for J. Dampney & Co.—Amended plans by E. M. Lawson, Barras-bldgs., approved for rebuilding of "Chillingham Hotel," Chillingham-rd.

Newcastle-on-Tyne. — Report in connection with proposal to erect bridge at Scotswood to be prepared by Mott, Hay, and Anderson, consulting engineers, London.

Newcastle (Staffs).—Rev. C. A. A. Elland and Parochial Council of St. Michael's propose church, at £8,000. Architect, F. R. Lawson, Glebe-st., Stoke-on-Trent.

Orrell.—Council approved erection of senior Roman Catholic school in St. James's-rd., subject to C.C.

Paddington.—B.C. approved plans by Robert Atkinson (F.) for 4 houses, 23/25, Sussex-sq.

Ponteland.—Memorial Hall Committee propose meeting hall, at £1,000.

Pwllheli.—W. S. Lloyd, Railway Stores, proposes shop premises, Penrhydliniog. Plans by Griffith Morris, 120a, High-st., Portmadoc.

Ripon.—Governors of Ripon Cathedral Schools propose additions to school buildings. Plans by G. D. Channon (A.), 4, Market-st., Malton.

Sheffield.—Plans approved by T.C.: Ice rink, dance hall, etc., Penistone-rd. and Rudyard-rd., W. Wilkinson Organ, 36, Meadow Bank-av.; dance hall and hotel, Sharrow Vale-rd. and Cowlishaw-rd., L. Hyman, 10, Victoria-rd.; service garage and petrol station, Brightside-ln., W. H. Lancashire & Son, architects, Hartshead; 24 houses and 22 garages, and bungalow, School Green-ln., Brooklands-av., Brooklands-pl. and Moorcroft-rd., T. W. Knowles, Ltd., Turners-ln.; 78 flats, restaurant, garages, etc., Fulwood-rd., A. Krausz, 9, Wilkinson-st.

Sheffield.—Council of University accepted offer of University Grants Committee of £10,000 towards second portion of extensions of University Buildings.

Shrewsbury.—West Midlands Joint Electricity Authority, Ironbridge, propose reconstruction of premises, Butcher-row, for showrooms and offices.

Southport.—Jones & Rigby (F. and A.), 271, Lord-st., preparing plans for additions to Homœopathic Hospital, Fleetwood-rd., for Corporation.

Stockport.—A. V. Roe & Co., Ltd., Newton Heath, Manchester, propose factory, Wilmslow-rd., Woodford.

Stockton-on-Tees.—Ashmore, Benson Pease & Co., Parkfield Works, to erect workshop.

Sutton Coldfield.—Plans approved by T.C.: 55 houses, Westwood-rd., British Ensign Builders, Ltd., Longmore-rd.

Taunton.—T.C. approved:—110 houses, Halcon estate, T.C.; 46 houses, Lyngford estate, T.C.

Tuam.—Town Commissioners authorised to erect new town hall, at £4,500.

Uttoxeter.—U.D.C. approved plans for alterations and extensions to the Leighton Iron Works Club, Balance-st., for Building Committee. Architects, Forshaw & Greaves, 45, Trinity-st., Hanley.

Wakefield.—R.D.C. approved plans: Sunday-school, Crossley-st., Sharlston, for Trustees of New Sharlston Methodist Church. Architect, —, Booker, "Greenside," Walton.

Walton and Weybridge.—U.D.C. approved: Cottimore Estates, Ltd., 7 pair of houses, Cottimore-av., Walton; W. Wisenden, 4 shops with flats over, Oak Lodge Estate, Queen's-rd., Hersham; A.B.C. Motors, Ltd., canteen, Molesey-rd., Hersham.

Warmley.—Engineering factory to be erected at Tower-rd. North, Warmley, for Magnal Products, Ltd.

Warwick.—R.D.C. approved plans for 24 houses, Crossway-rd., Stoneleigh, for H. Darbyshire, Brunsall-rd., Coventry.

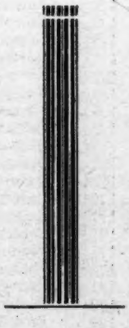
Washington.—A. J. Lamb, 16, Dean-st., Newcastle-on-Tyne, architect for converting Southgate Villa into licensed premises.

Wycombe. — R.D.C. received revised lay-out plans for 83 houses on land, Wycombe-rd., Princes Risborough, from H. C. Janes, Ltd., and approved.

*See also List of Contracts Open.

***** In these lists every care is taken to ensure that information given is accurate and up to date, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. List of abbreviations on page 1044.**

HALL OF NATIONS
CARDIFF



ARCHITECT
PERCY THOMAS P.P.R.I.B.A.

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RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st FEBRUARY, 1938.

[Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.]

	Crafts-men.	Lab-ourers.
Aberavon	1/7½	1/2½
Aberdare	1/7	1/2½
Abergavenny	1/7	1/2½
Abingdon	1/6	1/1½
Accrington	1/7½	1/2½
Aldeburgh	1/3½	11½
Aldershot	1/5½	1/1½
Alfreton	1/7½	1/2½
Alnwick	1/7	1/2½
Altrincham	1/7½	1/2½
Amble	1/7	1/2½
Amersham	1/6	1/1½
Ammanford	1/7½	1/2½
Andover	1/5½	1/1½
Ardingley	1/5½	1/1½
Arundel	1/5½	1/1½
Ascot	1/5½	1/1½
Ashby-de-la-Zouch	1/6	1/1½
Ashford (Kent)	1/5	1/0½
Ashford (Middlesex)	1/7½	1/2½
Ashington	1/7	1/2½
Ashtead	1/7½	1/2½
Ashton-under-Lyme	1/7½	1/2½
Aylesbury	1/5½	1/1½
Aylsham	1/4½	1/0½
Bagshot	1/5½	1/1½
Banbury	1/5½	1/1½
Barnsley	1/7½	1/2½
Barnstaple	1/5½	1/1½
Barrow-in-Furness	1/7½	1/2½
Barry	1/7½	1/2½
Basingstoke	1/5½	1/1½
Bath	1/6½	1/2
Batley	1/7½	1/2½
Beaconsfield	1/6	1/1½
Beccles	1/4	1/0
Bedford	1/6½	1/2
Berkhamsted	1/5	1/0½
Berwick	1/7	1/2½
Beverley	1/7½	1/2½
Bexhill-on-Sea	1/5½	1/1½
Bideford	1/5½	1/1½
Biggleswade	1/5	1/0½
Billericay	1/5	1/0½
Birchington	1/5	1/0½
Birkenhead	‡§1/9½	¶
Birmingham	1/7½	1/2½
Bishop Auckland	1/7½	1/2½
Bishops Stortford	1/6	1/1½
Blackburn	1/7½	1/2½
Blackpool	1/7½	1/2½
Blyth	1/7½	1/2½
Bognor Regis	1/5½	1/1½
Bolton	1/7½	1/2½
Bournemouth	1/6½	1/2
Bracknell	1/5½	1/1½
Bradford	1/7½	1/2½
Bradford-on-Avon	1/4½*	1/0½
Braintree	1/5½	1/1½
Brentwood	1/7	1/2½
Bridgwater	1/5½	1/1½
Bridlington	1/7	1/2½
Brighouse	1/7½	1/2½
Brighton	1/6½	1/2
Bristol	1/7½	1/2½
Broadstairs	1/5	1/0½
Bromsgrove	1/6½	1/2
Buckley	1/7½	1/2½
Bungay	1/3½	11½
Burnham-on-Crouch	1/4	1/0
Burnley	1/7½	1/2½
Burslem	1/7½	1/2½
Burton-onTrent	1/7½	1/2½
Bury	1/7½	1/2½
Bury St. Edmunds	1/5	1/0½
Buxton	1/7	1/2½
Byfleet	1/6	1/1½
Cambridge	1/7	1/2½
Canterbury	1/5	1/0½
Cardiff	1/7½	1/2½
Carlisle	1/7½	1/2½
Carnforth	1/7½	1/2½
Castleford	1/7½	1/2½
Caterham	1/7½	1/2½
Chard	1/4½*	1/0½
Chatham	1/6	1/1½
Chelmsford	1/6	1/1½
Cheltenham	1/6½	1/2
Chepstow	1/6½	1/2
Chertsey	1/6½	1/2
Chester	1/7½	1/2½
Chesterfield	1/7½	1/2½
Chichester	1/5½	1/1½
Chorley	1/7½	1/2½
Cirencester	1/5*	1/0½
Clacton	1/5½	1/1½
Cleveleys	1/7½	1/2½
Clitheroe	1/7½	1/2½
Cobham (Surrey)	1/6½	1/2
Colchester	1/6½	1/2
Colwyn Bay	1/6½	1/2
Congleton	1/7	1/2½
Coventry	1/7½	1/2½
Cranbrook	1/5	1/0½
Cranleigh	1/5½	1/1½
Crawley	1/5½	1/1½
Crewe	1/6½	1/2
Cromer	1/4½	1/0½
Crowborough	1/5½	1/1½
Cuckfield	1/5½	1/1½
Darlington	1/7½	1/2½
Darwen	1/7½	1/2½
Daventry	1/6	1/1½
Deal	1/5	1/0½
Denbigh	1/6	1/1½
Derby	1/7½	1/2½
Devizes	1/4*	1/0
Dewsbury	1/7½	1/2½
Didcot	1/5½	1/1½
Diss	1/4	1/0
Doncaster	1/7½	1/2½
Dorchester	1/5*	1/0½
Dorking	1/6	1/1½
Dover	1/5	1/0½
Dovercourt	1/5½	1/1½
Driffield	1/6	1/1½
Droitwich	1/6½	1/2
Dudley	1/7½	1/2½
Dunstable	1/5½	1/1½
Durham City	1/7½	1/2½
Eastbourne	1/6½	1/2
E.Glam. (Mon. Val.)	1/7	1/2½
East Grinstead	1/5½	1/1½
Edenbridge	1/5½	1/1½
Ely	1/4	1/0
Epping	1/7½	1/2½
Exeter	1/6½†	1/2
Exmouth	1/5½	1/1½
Fakenham	1/4	1/0
Falmouth	1/6	1/1½
Fareham	1/6½	1/2
Faversham	1/5	1/0½
Felixstowe	1/6	1/1½
Filey	1/6	1/1½
Fleetwood	1/7½	1/2½
Flint	1/7	1/2½
Folkestone	1/5	1/0½
Frinton-on-Sea	1/5½	1/1½
Frome	1/4½*	1/0½
Gainsborough	1/6½	1/2
Gateshead	1/7½	1/2½
Gillingham (Kent)	1/6	1/1½
Glossop	1/7½	1/2½
Gloucester	1/6½†	1/2
Godalming	1/5½	1/1½
Goole	1/7½	1/2½
Gosport	1/6½	1/2
Grantham	1/6½	1/2
Gravesend	1/7	1/2½
Great Yarmouth	1/5½	1/1½
Grimsby	1/7½	1/2½
Guildford	1/5½	1/1½
Guilsborough	1/6	1/1½
Halifax	1/7½	1/2½
Hanley	1/7½	1/2½
Harpenden	1/6	1/1½
Harrogate	1/7½	1/2½
Hartlepools	1/7½	1/2½
Harwich	1/5½	1/1½
Haslemere	1/5½	1/1½
Hastings	1/5½	1/1½
Hatfield	1/6½	1/2
Haywards Heath	1/5½	1/1½
Hednesford	1/7	1/2½
Hemel Hempstead	1/6½	1/2
Henley-on-Thames	1/5½	1/1½
Hereford	1/5½*	1/1½
Herne Bay	1/5	1/0½
Hertford	1/6½	1/2
Heysham	1/7½	1/2½
Hitchin	1/6	1/1½
Hoddesdon	1/6½	1/2
Holt (Norfolk)	1/3½	11½
Horley	1/5½	1/1½
Horsham	1/5½	1/1½
Horwich	1/7½	1/2½
Huddersfield	1/7½	1/2½
Hull	1/7½	1/2½
Hunstanton	1/4	1/0
Huntingdon	1/4½	1/0½
Ilfracombe	1/5½	1/1½
Ingatestone	1/5½	1/1½
Ipswich	1/6½	1/2
Isle of Thanet	1/5	1/0½
Isle of Wight	1/4½	1/0½
Keighley	1/7½	1/2½
Kenilworth	1/7½	1/2½
Kettering	1/7	1/2½
Kidderminster	1/6½	1/2
King's Lynn	1/5	1/0½
Kirkham	1/7½	1/2½
Knowle	1/7	1/2½
Lancaster	1/7½	1/2½
Leamington	1/7½	1/2½
Leatherhead	1/6½	1/2
Leeds	1/7½	1/2½
Leicester	1/7½	1/2½
Leighton Buzzard	1/4½	1/0½
Letchworth	1/6	1/1½
Lewes	1/5½	1/1½
Lichfield	1/6½	1/2
Lincoln	1/7½	1/2½
Littlehampton	1/5½	1/1½
Liverpool	‡§1/9½	¶
Llandudno	1/6½	1/2
Llanelly	1/7½	1/2½
London—		
12 m. radius	1/9*	1/3½
12-15 m. radius	1/8½*	1/3½
Long Eaton	1/7½	1/2½
Longton	1/7½	1/2½
Loughborough	1/7½	1/2½
Louth	1/6	1/1½
Lowestoft	1/5½	1/1½
Luton	1/7	1/2½
Macclesfield	1/7	1/2½
Maidenhead	1/6	1/1½
Maidstone	1/6	1/1½
Malvern	1/6	1/1½
Manchester	1/7½	1/2½
Manningtree	1/4	1/0
Mansfield	1/7½	1/2½
March	1/4½	1/0½
Margate	1/5	1/0½
Market Harborough	1/6½	1/2
Matlock	1/6	1/1½
Melton Constable	1/3½	11½
Melton Mowbray	1/6½	1/2
Merthyr Tydfil	1/7	1/2½
Middlesbrough	1/7½	1/2½
Middleton	1/7½	1/2½
Middlewich	1/6½	1/2
Milford Haven	1/5½	1/1½
Morecambe	1/7½	1/2½
Morley	1/7½	1/2½
Mundesley	1/4½	1/0½
Nantwich	1/6½	1/2
Nelson	1/7½	1/2½
Newark-on-Trent	1/6½	1/2
Newbury	1/5½	1/1½
Newcastle-on-Tyne	1/7½	1/2½
Newcastle-u-Lyme	1/7½	1/2½
New Forest	1/4½	1/0½
Newmarket	1/5½	1/1½
Newport, Mon.	1/7½	1/2½
Newport Pagnell	1/5½	1/1½
Northampton	1/7½	1/2½
Norwich	1/7½	1/2½
Nottingham	1/7½	1/2½
Nuneaton	1/7½	1/2½
Oakham	1/6	1/1½
Oldham	1/7½	1/2½
Ormskirk	1/7½	1/2½
Oxford	1/7	1/2½
Oxted	1/6	1/1½
Paignton	1/7	1/2½
Peterborough	1/7	1/2½
Plymouth	1/7½	1/2½
Pontefract	1/7½	1/2½
Pontypridd	1/7	1/2½
Portsmouth	1/6½	1/2
Port Talbot	1/7½	1/2½
Preston	1/7½	1/2½
Pulborough	1/5½	1/1½
Ramsgate	1/5	1/0½
Reading	1/6½	1/2
Redditch (Northern)	1/6½	1/2
Redhill	1/6	1/1½
Reigate	1/6	1/1½
Retford	1/6	1/1½
Rickmansworth	1/7	1/2½
Ripon	1/6	1/1½
Rochdale	1/7½	1/2½
Rochester	1/6	1/1½
Rugby	1/7½	1/2½
Saffron Walden	1/4	1/0
St. Albans	1/7	1/2½
St. Helens	1/7½	1/2½
St. Neots	1/4½	1/0½
Salisbury City	1/4½*	1/0½
Salisbury Plain	1/5½*	1/1½
Sawbridgeworth	1/5½	1/1½
Saxmundham	1/3½	11½
Scarborough	1/7	1/2½
Scunthorpe	1/7½	1/2½
Selby	1/7½	1/2½
Sevenoaks	1/6	1/1½
Sheerness	1/5	1/0½
Sheffield	1/7½	1/2½
Shipley	1/7½	1/2½
Shoeburyness	1/7	1/2½
Shoreham	1/6½	1/2
Shrewsbury	1/6½	1/2
Sittingbourne	1/5	1/0½
Skegness	1/6½	1/2
Sleaford	1/6	1/1½
Slough	1/6½	1/2
Southampton	1/7	1/2½
Southend-on-Sea	1/7	1/2½
Southport	1/7½	1/2½
South Shields	1/7½	1/2½
Spalding	1/5½	1/1½
Stafford	1/7	1/2½
Staines	1/6½	1/2
Stamford	1/6½	1/2
Stevenage	1/6	1/1½
Stockport	1/7½	1/2½
Stockton-on-Tees	1/7½	1/2½
Stoke-on-Trent	1/7½	1/2½
Stourbridge	1/7	1/2½
Stourport	1/6½	1/2
Stowmarket	1/4	1/0
Stratford-on-Avon	1/6	1/1½
Stroud	1/6†	1/1½
Sunderland	1/7½	1/2½
Sutton Coldfield	1/7½	1/2½
Swaffham	1/3½	11½
Swanage	1/5½*	1/1½
Swansea	1/7½	1/2½
Swindon	1/6*	1/1½
Tamworth	1/7	1/2½
Taunton	1/5½	1/1½
Tenterden	1/5	1/0½
Thames Haven	1/7½	1/2½
Thetford	1/4	1/0
Thorpe Bay	1/7	1/2½
Todmorden	1/7½	1/2½
Tonbridge	1/6	1/1½
Torquay	1/7	1/2½
Totnes	1/5½	1/1½
Trowbridge	1/4½*	1/0½
Truro	1/4½	1/0½
Tunbridge Wells	1/6	1/1½
Uppingham	1/6	1/1½
Uttoxeter	1/6	1/1½
Wakefield	1/7½	1/2½
Walsall	1/7½	1/2½
Walsden	1/7½	1/2½
Walton-on-Naze	1/5½	1/1½
Ware	1/6½	1/2
Warminster	1/4½*	1/0½
Warrington	1/7½	1/2½
Warwick	1/7½	1/2½
Wellingborough	1/7	1/2½
Wells (Norfolk)	1/3½	11½
Welwyn	1/6½	1/2
Welwyn Gar. City	1/7½	1/2½
West Bromwich	1/7½	1/2½
Westcliff-on-Sea	1/7	1/2½
Weston-super-Mare	1/6½	1/2
Weybridge	1/6½	1/2
Weymouth	1/5*	1/0½
Whitby	1/6½	1/2
Whitstable	1/5	1/0½
Widnes	1/7½	1/2½
Wigan	1/7½	1/2½
Wigton	1/6	1/1½
Willington	1/7	1/2½
Wilmslow	1/7½	1/2½
Winchester	1/5½	1/1½
Windermere	1/6	1/1½
Windsor	1/6½	1/2
Wisbech	1/4½	1/0½
Witham	1/5½	1/1½
Woking	1/6	1/1½
Wokingham	1/5½	1/1½
Wolverhampton	1/7½	1/2½
Woodbridge	1/4½	1/0½
Worcester	1/7	1/2½
Workington	1/6½	1/1½
Worksop	1/6	1/2
Worthing	1/5½	1/1½
Wrexham	1/7	1/2½
Wroxham	1/5	1/0½
Wycombe	1/6	1/1½
Wymondham	1/4	1/0
Yeovil	1/5½	1/1½
York	1/7½	1/2½

* Painters 1d. less than other Craftsmen. † Painters ½d. less than other Craftsmen. ‡ Plasterers 1/10.

¶ Tradesmen's Labourers 1/4½. Navvies and General Labourers 1/3½

Joiners, Plumbers, Bricklayers, Tilers and Masons receive 2/- per week or 4d. per day Tool Money.

For Building Trade Wages in Scotland see page 1052.

CURRENT PRICES FOR BUILDING WORK IN LONDON.

Note.—These prices apply to new buildings only. They cover superintendence by foreman and carry a profit of 10 per cent. on the prime cost, without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts, and from 1s. 6d. per £100 Fire Insurance. The whole of the information given is copyright.

		£	s.	d.
PRELIMINARIES.				
Hoardings, with suitable gate, 8 ft. high	per ft. run	0	3	0
Steel scaffolding for brickwork	per sqre.	1	5	0
Steel scaffolding for stone building	,,	1	10	0
Steel gantry for stone building	per ft. run	2	10	0
Office, shed for cement and mess-room	say	75	0	0
EXCAVATOR.				
Digging, throwing out and filling into carts and carting to shoot, 5 ft. deep	per yd. cube	0	7	9
Add if stiff clay	,,	0	1	0
Add for every additional 5 ft.	,,	0	0	6
Add if in trenches	,,	0	0	9
Add to price of digging for breaking up concrete foundation and brickwork	,,	0	10	0
Return, fill and ram	,,	0	1	9
Fill into carts and cart away	,,	0	3	6
Planking and strutting to trenches	per ft. super	0	0	3½
Planking and strutting to sides of basement excavation next roadway	,,	0	1	4
Needling, flying and raking shores and removing after and carting away	per ft. cube	0	6	9
CONCRETOR.				
Portland cement and ballast concrete 1-6 in. foundations	per yd. cube	1	2	0
Add in underpinning in short lengths	,, ,,	0	6	0
Concrete in floors, ¾ in. aggregate, and sand, 1-2-4—				
4 in. thick	per yd. super	0	3	4
6 in. thick	,, ,,	0	4	8
Add if trowelled smooth	,, ,,	0	0	9
Add for hoisting, each floor	,, ,,	0	0	3
Concrete 1-2-4 in. beams and stanchions	per ft. cube	0	1	4
Concrete in lintols, with steel rod reinforcement each 4½ in. width and shuttering	,, ,,	0	4	0
1½ in. centering, with stout supports for concrete floors	per square	2	2	0
Do. to sides and soffites of beams	per ft. super	0	0	8
Do. to sides of stanchions	,, ,,	0	0	7
Steel rod reinforcement under ⅝ in. diameter, cut, bent and placed in position	per cwt.	1	8	0
Do. do. over ⅝ in. diameter	,,	1	5	0
BRICKWORK.				
Reduced to 1½ brick in flettons, lime mortar	per rod	26	0	0
Add for 2nd hard stocks	,,	8	0	0
Add for Blue Staffordshire	,,	22	0	0
Add to above if in 1-4 cement	,,	0	15	0
Add if in backing to stonework	,,	1	5	0
Add if in underpinning in cement	,,	4	10	0
Add if above 40 ft. to 60 ft. high	,,	2	0	0
SUNDRIES.				
Damp course in double course of slates, breaking joint	per ft. super	0	0	11
Vertical do. do.	,,	0	1	2
Bitumastic	,,	0	0	5
Lead core	,,	0	0	10
Cut, tooth and bond new to old brickwork	,,	0	1	0
Rake out joints of brickwork	,,	0	0	1
Leave chase for concrete floor	per ft. run	0	0	2
Cut chase 4½ in. deep for concrete floor	,,	0	1	2
Leave chase for vertical pipe	,,	0	0	4
Cut chase for vertical pipe	,,	0	1	4
Rake out joint for flashings and point	,,	0	0	2
Do. stepped do.	,,	0	0	4
Do. for asphalt skirting	,,	0	0	2
Build in ends of timbers	each	0	0	4
Do. steel joists up to 12 in. deep	,,	0	0	6
Do. step and make good facings	,,	0	1	6
Set and flaunch chimney pots	,,	0	7	6
Render fire openings	,,	0	2	0
Bed and point door frames one side	,,	0	3	0
Do. both sides	,,	0	4	6
Do. window frames, one side	,,	0	4	0
Setting only register grate	,,	1	0	0
Do. interior hearths and mantles	,,	1	15	0
Do. kitchen range, large	,,	5	0	0
Fix air brick and form flue	,,	0	2	0
Cut holes for pipes and make good facings, 9 in. wall	,,	0	2	0
Do. do. 13½ in. wall	,,	0	2	6
Do. large pipes and do. 9 in. wall	,,	0	3	0
Do. do. 13½ in. wall	,,	0	3	6
FACINGS.				
Extra for facings in Flemish bond for each 10s. per thousand over the price of Flettons	per ft. super	0		1½
Pointing facings to approval	,,	0		3
Arches extra over Flettons in stocks	,,	0		8
Do. in reds	,,	1		0
Do rubbed and gauged in putty	,,	5		9

		£	s.	d.
PARTITIONS.				
2 in. breeze slab partitions in cement	per yd. super		4	0
3 in. do. do.	,,		4	6
2 in. hollow-tile do.	,,		4	9
3 in. do. do.	,,		5	6
PAVING.				
1 in. granolithic paving gauged 5—2	per yd. super		2	7
1½ in. do. do.	,,		2	11
1 in. × 6 in. covered skirting	per ft. run		0	10
ASPHALT (NATURAL).				
½ in. horizontal damp course	per ft. super		0	6
¾ in. horizontal damp course	,,		0	8
¾ in. vertical do. in two layers	per yd. super		9	6
¾ in. in flats, two layers	,,		6	0
Angle fillet	per ft. run		0	3
6 in. skirting and angle fillet and jointing top edge	,,		1	0
DRAINAGE.				
Excavate, trench for drain and throw out, return, fill and ram, and including any planking and strutting required, and cart away surplus earth per ft. run	1 ft. deep	0	5	
	2 ft. deep	0	10	
	3 ft. deep	1	3	
	4 ft. deep	1	8	
	5 ft. deep	4	2	
	6 ft. deep	5	0	
	7 ft. deep	5	10	
	8 ft. deep	6	8	
4 in. best quality glazed stoneware drain pipe, socketed joints, yarn and neat cement, on and including cement concrete bed, 18 in. wide and 6 in. thick, and benched up on each side of pipe	per ft. run		2	4
6 in. do. do. do. but concrete bed 20 in. and 6 in. thick	,,		3	0
9 in. do. do. do. but concrete bed 23 in. wide and 6 in. thick	,,		4	11
Extra for 4 in. bends	each		2	6
Do. 6 in. ,,	,,		3	6
Do. 9 in. ,,	,,		5	6
Extra for 4 in. junctions	,,		2	9
Do. 6 in. ,,	,,		3	9
Do. 9 in. ,,	,,		6	0
4 in. stoneware gully, encased in concrete and making good granolithic paving	,,		13	0
6 in. do.	,,		14	0
9 in. do.	,,		18	6
4 in. stoneware interceptor, and surround with concrete	,,	1	5	0
6 in. do.	,,	1	10	0
9 in. do.	,,	2	10	0
IRON DRAINS.				
4 in. C.I. drain and laying and jointing in molten lead	per ft. run		3	4
6 in. do. do.	,,		5	0
Extra for 4 in. bends	each		10	0
Extra for 6 in. bends	,,		18	0
Extra for 4 in. junctions	,,		17	6
Extra for 6 in. junctions	,,		30	0
MASON.				
Bath stone and all labour, fixed	per ft. cube		10	9
Portland stone and all labour, fixed	,, ,,		17	9
York stone templates, fixed	,, ,,		12	6
York stone steps, fixed	,, ,,		16	0
York stone cills, fixed	,, ,,	1	2	0
SLATER.				
24 × 12 Bangor slates laid to 3 in. lap secured with zinc nails	per square	3	18	6
20 × 10 do.	,,	3	13	6
16 × 8 do.	,,	3	11	6
Extra to eaves course	per ft. run		0	9
Extra to top edge and square abutments	,,		0	4½
Extra to verge and labour only, bedding and pointing	,,		0	7½
Raking, cutting and waste	,,		0	7
Half-round red ridge tile	,,		1	2
Half-round blue ridge tile	,,		1	8
Fixing only soakers	per dozen		0	9
Red hand-made sand-faced tiles laid to 4 in. gauge, nailed every fifth course with galvanised iron nails	per square	3	0	0
Extra to eaves course	per ft. run		0	5
Extra to top edge and square abutments	,, ,,		0	3½
Extra to verge and bed and point	,, ,,		0	11
Half-round ridge	,, ,,		1	4
Bonnet hips, including cutting and waste (both sides)	,, ,,		3	8
Valley tiles, including cutting and waste (both sides)	,, ,,		3	6
Fixing only soakers	per dozen		0	9

CURRENT PRICES FOR BUILDING WORK IN LONDON.—continued.

CARPENTER AND JOINER.

		s.	d.
Fir framed in plates	per ft. cube	4	0
Do. joints	„ „	4	6
Do. roofs, etc.	„ „	5	3
Do. trusses	„ „	6	9

		¾in.	1in.	1¼in.
Deal rough close boarding	per sq.	32/-	38/-	47/-
Battens for slating	„	10/-	11/-	12/-

		s.	d.
Centre for arches	per ft. super	1	6
Gutter boards and bearer	„ „	1	0

FLOORING.

		¾in.	1in.	1¼in.	1½in.
Deal edges shot	per sq.	—	41/-	49/-	58/-
Do. tongued and grooved	„	—	46/-	55/-	67/-
Do. matchings	„	42/-	47/6	—	—
Moulded skirtings, including backings and grounds	per ft. super	1/4	1/7	1/9	2/3
Mitres	each	-/6	-/8	-/9	1/-
Stop ends	„	-/3	-/4	-/4	-/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half in. moulded sashes	per ft. super	1	9
Two in. do. do.	„ „	2	0
Add for fitting and fixing	„ „	0	2
Deal cased frames, 1 in. linings, 1½ in. pulley and stiles, 2 in. moulded sashes, in squares, hardwood cill, double hung with pulleys, lines and weights, average size	„ „	3	3

DOORS.

		1½in.	1¾in.	2in.
Two-panel square framed	per ft. super	2 1	2 3	2 5
Four-panel do.	„ „	2 4	2 6	2 9
Two-panel moulded both sides	„ „	2 6	2 9	2 11
Four-panel do. do.	„ „	2 9	2 11	3 2

		£	s.	d.
Flush doors. 1½ in. to 2 in. finished thickness skeleton core, covered each side with Columbian pine ply, solid pine edging, 2 ft. 6 in. by 6 ft. 6 in.	each	1	15	0
Do., covered with Gaboon mahogany ply, solid mahogany edging, 2 ft. 6 in. by 6 ft. 6 in.	„	2	0	0
Solid core, all as first item	„	2	0	0
Solid core, all as second item	„	2	5	0
Shaped peep holes, 4 sided	„	0	5	0
Hexagonal holes	„	0	6	0
Circular holes	„	0	7	0

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per ft. cube	12	0
Hardwood do. do.	„ „	36	0

		1in.	1¼in.	1½in.
Plain deal jamb linings, framed	per ft. super	1 7	1 8	1 11
Deal shelves and bearers	„ „	1 2	1 4	1 7
Add if cross-tongued	„ „	-/2	-/2	-/2
Deal window board, tongued to oak cill and bearers	„ „	1 6	1 9	2 0

		s.	d.
Deal moulding, tongued and grooved to window board	per ft. run	0	6

SUNDRIES.

		s.	d.
Deal architrave, including mitres per sectional inch.	per ft. run	0	1
Glazing beads, deal fixed	„ „	0	2
Do. fixed with brass screws and cups	„ „	0	4
Rebate	„ „	0	0½
Groove	„ „	0	0½
Notching	„ „	0	2
Tongued and grooved angle	„ „	0	3½
Rounded heel and hollow	„ „	0	2½

STAIRCASES.

		1in.	1¼in.	1½in.	2in.
Deal treads and risers on and including rough brackets	per ft. super	2/-	2/3	2/8	—
Deal strings, wrot and framed	„ „	—	—	2/2	2/8
Housings	each				0 9
Mahogany handrail, average 3 in. x 3 in.	per ft. run				5 6
Add if ramped	„ „				11 0
Add if wreathed	„ „			1	2 0

FIXING ONLY IRONMONGERY.

	s.	d.
Barrel bolts	0	8
Sash fasteners	1	0
Casement fasteners	1	2
Casement stays	1	2

FIXING ONLY IRONMONGERY—*Continued.*

	£	s.	d.
Flush bolts		1	6
Cupboard locks		1	6
Rim locks and furniture		2	0
Mortice locks and furniture		4	0
Floor springs, including oil	1	0	0
Overhead springs		5	0

FOUNDER AND SMITH.

		£	s.	d.
Rolled steel joists	per cwt.	1	1	0
Compound girders	„	1	4	0
Stanchions	„	1	6	0
Roofwork	„	1	12	0

RAINWATER GOODS.

		3 in.	4 in.	5 in.	6 in.
Half-round eaves gutters and fixing	per ft. run	1/3	1/4	1/10	1/11
Ogee do. do.	„ „	1/5	1/6	2/1	2/9
R.W. pipe and fixing	„ „	1/7	2/1	—	—
Extra for shoes and bends	each	3/3	4/6	—	—
Do. stopped ends	„	1/3	1/7	2/-	3/-
Do. nozzles and angles	„	2/7	3/-	4/2	4/8

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	40	0
Do. in flats	„	39	0
Extra labour and solder in cesspools	each	6	0
Welt joint	per ft. run	0	4
Soldered seam	„ „	1	6
Copper nailing—close	„ „	0	3
Do. do. open	„ „	0	2
Soldered dots	each	2	0
Bossed ends to rolls	„	0	6

	½in.	¾in.	1in.	1¼in.	1½in.	2in.	4in.
Lead overflow per ft. run	-/8½	1/-	1/6	1/9	2/1	2/9	—
„ service „	1/2	1/9	2/8	3/6	4/-	5/3	—
„ soil „	—	—	—	—	—	—	6/-
Bends in pipe each	—	—	—	—	1/9	2/-	5/6
Wiped solder joints „	1/9	2/3	2/6	3/-	3/4	4/-	5/9
Lead traps and cleaning screws „	—	—	—	6/6	9/6	—	—
Stopcocks and joints „	11/-	14/-	18/-	—	—	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yd. super	2	0
Do. narrow widths	per ft. super	0	4
Do. and set with Sirapite	per yd. super	2	3
Do. narrow widths	per ft. super	0	4
Do. and set with Keenes	per yd. super	3	0
Do. narrow widths	per ft. super	0	5½
Add sawn lathing	per yd. super	1	4
Add metal lathing (not including hangers or runners for suspended ceilings)	„ „	2	4
Portland cement screed	„ „	1	7
Do. plain face	„ „	3	3
Mouldings in plaster	per 1 in. girth	0	1½

GLAZIER.

		s.	d.
24 oz. sheet	per ft. super	0	7½
26 oz. sheet	„ „	0	8
24 oz. Obscured sheet	„ „	0	8½
Double Cathedral	„ „	0	9½
Majestic	„ „	0	10
Flemish	„ „	0	10
Pinhead Morocco	„ „	0	10
¼ in. rough rolled or cast plate	„ „	0	10½
¼ in. wired cast plate	„ „	1	1½

PAINTER.

		s.	d.
Preparing and distempering, two coats	per yd. super	0	7½
Knotting and priming	„ „	0	7
Plain painting, one coat	„ „	0	9
Do. two coats	„ „	1	2
Do. three coats	„ „	1	9
Do. four coats	„ „	2	4
Graining	„ „	2	3
Varnishing, twice	„ „	1	9
Sizing	„ „	0	3
Flatting	„ „	0	7
Enamel	„ „	1	1
Wax polishing	per ft. super	0	6
French polishing	„ „	1	3
Preparing for and hanging paper	per piece	2/-	to 4/-

PRICES CURRENT OF MATERIALS*

Owing to the exceptional circumstances which prevail at the present time prices of materials should be confirmed by inquiry.

CHANGES OF THE WEEK.—Lead drops by 10/- per ton.

BRICKS, &c.

Delivered to site, City and Central Area, Full Lorry Loads. £ s. d.

Best Stocks 4 15 0
Second Hard Stocks 4 8 0

Per 1,000. Delivered at London Goods Stations.

2½ in Phorpres.	King's Cross Station. per 1,000.	To sites in W.C. District. per 1,000
	s. d.	s. d.
Pressed bricks	46 3	50 6
Cellular bricks	46 3	50 6
Keyed bricks	48 3	52 6
Cellular Keyed bricks	48 3	52 6
Rustic bricks	*66 3	*70 6
Cellular Rustic bricks	*66 3	*70 6
Single Bullnose	64 3	68 6
White bricks	*66 3	*70 6
Sandfaced bricks	—	75 6

* Subject to a special discount of 2s. per 1,000 if accompanied by order for Pressed £ s. d.

White Midhurst Facing Bricks (delivered London site) 3 12 6
Best blue Pressed Staffs 8 6 6
Do., Bullnose 8 16 6
Blue Wire Cuts 7 4 0

Best Stourbridge Fire Brick:—

£ s. d.	£ s. d.
2½ in. 7 15 0	3 in. 8 15 0

GLAZED BRICKS—

Best White Ivory and Salt Glazed Stretcher	24 0 0	D'ble Str'tch'rs .. D'ble Headers .. One side & two ends	32 10 0 29 10 0 33 10 0
Headers	23 10 0	Two sides & one end	34 10 0
Quoins, Bullnose and 4½in. Flats.	30 10 0	Splays and Squints	31 0 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

PARTITION SLABS.

Delivered London Area.

PHORPRES HOLLOW PARTITION BLOCKS.

2" per yd. sup.	2 3	3" per yd. sup.	2 9
2½" " "	2 6	4" " " ...	3 1

CLINKER CONCRETE.

2" per yd. sup.	1 6	3" per yd. sup.	2 0
2½" " "	1 8	4" " "	2 4

CRANHAM TERRA COTTA.

2" per yd. sup.	3 0	3" per yd. sup.	3 8
2½" " "	3 6	4" " "	4 7

HEMPSTEAD—KEYED TWO SIDES.

12" x 9" x 2"	2 6
12" x 9" x 2½"	2 9
12" x 9" x 3" ..	3 0
12" x 9" x 4" ..	3 9

Per yard super d/d. Free on site, London

	s. d.	
Thames Ballast	7 3	per yd.
Pit Ballast	6 3	" "
Pit Sand	7 9	" "
Washed Sand	8 3	" "
½in. Shingle	7 3	" "
¾in. Broken Brick ..	11 3	" "
Pan Breeze	8 3	" "

} delivered 2 miles radius Paddington.

CEMENT.

Best British Portland Cement. Standard Specification delivered London Area in jute sacks (11 to ton), or paper bags (20 to ton) free (non-returnable):— £ s. d.

4 ton loads and upwards site ..... Per ton 2 2 0
1 ton to 4 tons site 2 5 0
Alongside Vauxhall in 80-ton lots 1 19 6
"Ferrocrete" Rapid Hardening Cement:—
4 ton loads and upwards site 2 8 0
1 ton to 4 tons site 2 11 0
Alongside Vauxhall in 80-ton lots 2 5 6
Stores in Reserved Bins at Works 1/0 ton extra.

NOTE.—Jute sacks are charged 1s. 6d. each and credited 1s. 6d. nett, if returned in good condition within three months, carriage paid.

"Aquacrete" Water Repellent, "BlueCircle" Cement, 30/- per ton extra on ordinary "Blue Circle" Portland Cement prices.

"Colorcrete" Nos. 1 and 2 Coloured Rapid Hardening Portland Cement in 1-cwt. paper bags free (non-returnable) in 1-ton lots and upwards site. 3 9 0

"Colorcrete," not rapid-hardening, in 1-cwt. paper bags free (non-returnable), according to colour, from £7 to £15 10s. per ton.

"Snowcrete" White Portland Cement in 1-cwt. paper bags free (non-returnable) 1 tons and upwards site. 3 15 0
Super Cement (Waterproof) paper bags free 3 12 0
Roman Cement £6 15 Keene's Cement, White 6 0 0
Parian Cement £6 0 " " Pink 5 12 6
Cementone Colours for cement according to tints per cwt. from £2 16s. 0d.

PLASTER.

	£ s. d.		£ s. d.
Coarse, Pink ..	3 2 0	Sirapite, Coarse	3 10 0
White	3 12 6	" Finish	3 18 0
Pioneer	3 10 6		
Super Carbo ..	2 7 6	} 4-ton loads & over London Area, paper bags free.	
Carbo Setting	2 12 6		
Best Ground Blue		Grey Stone Lime ..	2 2
Lias Lime ..	1 17 6	Chalk Lime	2 2 0
GraniteChippings	1 12 0	Hair per cwt.	2 7 6

NOTE.—Sacks are charged 1s. 9d. each, and credited 1s. 6d., if returned in good condition within three months, carriage paid.

Stourbridge Fireclay in sacks 37s. per ton at rly. dep.

STONE.

BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube ..... s. d. 2 10½

BEER STONE—RANDOM BLOCK—
Free on rail at Seaton Station. per ft. cube 2 3
Delivered free on rail Nine Elms, S.R. " 3 1½
Selected approximate size one way, 1d. per cubic ft. extra, selected approximately three sizes or for special work, 3d. per cubic ft. extra.

PORTLAND STONE—
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube ..... s. d. 4 5
Do. do. delivered on road waggons as above stations, per ft. cube 4 6
White basebed, 3d. per ft. cube extra.
NOTE.—1d. per ft. cube extra for every ft. over 20 ft. *average* and ½d. beyond 30 ft.

HOPTON-WOOD STONE—
F.O.R. Quarries, Wirksworth, Derbyshire, Random blocks from 10 ft. and over P.ft.cb. 14 0
Sawn two sides. 22 6

HOPTON-WOOD STONE—
Sawn three or four sides 27 9

YORK STONE, BLUE.—*Robin Hood Quality.*
Delivered at any Goods Station, London.
6 in. sawn two sides landings to sizes (under 30 ft. super) ..... per ft. super 5 0
6 in. rubbed two sides, ditto .. " 5 6
3 in. sawn two sides slabs (random sizes) ..... " 2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) ..... " 1 6½
1½ in. to 2 in., ditto ..... " 1 3½

HARD YORK—
Delivered at any Goods Station, London.
Scappled random blocks ..... Per ft. cube 6 3
6 in. sawn two sides landings to sizes (under 40 ft. super) ..... per ft. super 5 1½
6 in. rubbed two sides, ditto .... " 6 1½
4 in. sawn two sides slabs (random sizes) ..... " 3 1½
3 in. ditto ditto ..... " 2 5
2 in. self-faced random flags. ... Per yd. super 7 6

CAST STONE.

Delivered in London area in full van loads, per ft. cube: Plain, 7s. 6d. Moulded, 8s. 6d. Sills, 10s. 0d.

HARD WOOD.

1 INCH AND UP THICK

Average price for prime quality.	£ s. d.
Dry Austrian Wainscot, per ft. cube	0 17 0
Dry American and/or Japanese Figured Oak, per ft. cube ..... 10 0 to	0 12 6
Dry American and/or Japanese plain Oak, per ft. cube	0 11 6
Dry sq. edged Honduras Mahogany, per ft. cube.	0 15 0
Dry log-cut Honduras Mahogany, per ft. cube. ..... 12 6 to	0 16 6
Dry Cuba Mahogany, per ft. cube.	1 1 0
Dry Teak, per ft. cube.	0 14 0
Dry American Whitewood, per ft. cube. ...	0 10 6
Best Scotch Glue, per cwt.	3 0 0
Liquid Glue, per cwt. ..... 4 7 0 to	5 10 0

SOFT WOOD.

GOOD BUILDING DEAL.

Inches.	Per stan.	Inches.	Per stan.
4 x 11	£26 10	3 x 6	£22 10
4 x 9	26 10	3 x 11	26 10
4 x 8	24 10	2 x 11	26 10
4 x 7	24 10	3 x 9	23 10
3 x 8	22 10	2½ x 9	23 10
3 x 7	22 10	3 x 4½	22 0
2½ x 7	22 10	3 x 4	22 0

PLANED BOARDS.

1 x 11.	£26 10	1 x 9	£25 0

PLAIN EDGE FLOORING.

Inches.	Per sq.	Inches.	Per sq.
¾	17/-	1¼	28/-
1	20/-	1½	35/-
1.	22/-		

TONGUED AND GROOVED FLOORING.

Inches.	Per sq.
1	22/6
1¼	29/-
1½	36/-

ins. BATTENS. s. d.
4×2 per 100 ft. 2 6

MATCHING (BEST).

inches.	Per sq.
¾	18/-
1	20/-
1	26/-

SAWN LATHS. s. d.
Per bundle. 2 4

SLATES.

First quality slates from Penrhyn or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000 actual.

	£ s. d.		£ s. d.
24 by 12	31 5 0	18 by 10	16 10 0
22 by 12	26 5 0	18 by 9	14 17 6
22 by 11	23 12 6	16 by 10	14 7 6
20 by 12	23 2 0	16 by 8	11 6 0
20 by 10	20 15 0		

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons. ..... Per 1,000 f.o.r. London.

Best machine-made tiles from Broseley or Staffordshire district	£4 2 6
ditto hand-made ditto	4 17 6
Ornamental ditto	5 2 6
Hip and valley tiles (per dozen) { Hand-made	0 8 6
{ Machine-made	0 8 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—

R.S. Joists, cut and fitted.	£17 10 0
Plain Compound Girders	20 10 0
" " Stanchions	22 10 0
In Roof Work	27 10 0

MILD STEEL ROUNDS.—To London Stations, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	18 5 0	⅝ in. to ⅞ in. ..	16 15 0
⅜ in.	17 5 0	⅛ in. to 2¼ in. ..	16 5 0

WROUGHT-IRON TUBES AND FITTINGS—
(Discount off List for lot of not less than £10 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward, if sent from London Stocks.)

	Standard Wrot. Mild Steel Tubes and Tubulars. Sizes. ¼in. to ⅜in.	Sizes. ½ in. to 2in.	Standard Flanges. Sizes. ½in. to 2in	Standard Fittings
	%	%	%	%
Gas	60	65	62½	58½
Water	57	62½	62½	55
Steam	53½	58½	51½	50
Gal. gas ..	50	55	51½	48½
Galv. water	45	50	43½	43½
Galv. steam	38½	43½	38½	40

C.I. HALF-ROUND GUTTERS—London Price ex Works

Per yd. in 6 ft. lengths.	Gutters.	Angles and Nozzles.	Stop Ends.
3in.	1/9½	1/8	7d.
3½in.	2/1	2/-	8½d.
4in.	2/1	2/-	8½d.
4½in.	2/2½	2/1	9d.
5in.	2/4½	2/4	10d.
O.G. GUTTERS.			
3in.	2/1	2/-	8½d.
3½in.	2/3½	2/2	9½d.
4in.	2/5	2/4	10½d.
4½in.	2/6	2/5	1/0½
5in.	2/10	2/9	1/2½

RAIN WATER PIPES, &c.

Per yd. in 6fts.	Pipe.	Bends, stock angles.	Branches. stock angles.
2in.	2/8½	1/8	2/5½
2½in.	2/9½	1/11	2/11½
3in.	3/8	2/4½	3/7½
3½in.	4/1	2/10½	4/1½
4in.	4/9½	3/5	5/-

Less 20 per cent. trade discount.
Tonnage allowance—4-ton lots, 5 per cent.
2-ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES—London Prices ex Stock.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
2in. per yd. in 6fts. ..	3 5	2 5	2 11
2½in. " ..	3 10	2 8	3 3
3in. " ..	4 2	2 11	4 4
3½in. " ..	4 7	3 3	5 0
4in. " ..	5 1	4 0	5 10

L.C.C. COATED DRAIN PIPES.—London Prices, ex Stock.

	Pipe.	Bends, stock angle.	Branches, stock angles.
	s. d.	s. d.	s. d.
3in. per yd. in 9ft. lengths	4 9	5 4	8 9
cwt. qr. lbs.			
4in. ..	1 1 20 ..	6 0	6 1 .. 11 0
5in. "	1 2 22 ..	8 4	11 0 .. 16 11
6in. "	2 0 6 ..	10 0	12 10 .. 21 3

Gaskin for jointing 45/- per cwt.

	Per ton. £ s. d.		London £ s. d.
IRON—			
Common Bars	13 15 0	..	14 15 0
Staffordshire Crown Bars—			
Good merchant quality.	15 10 0	to	17 0 0
Staffordshire Marked Bars ..	18 0 0	..	19 0 0
Mild Steel Bars.	13 10 0	..	14 10 0
Steel Bars, Ferro-Concrete quality, basic price	15 0 0	..	16 0 0
Hoop iron, basic prices	15 0 0	..	16 0 0
" Galvanised	25 0 0	..	27 0 0

HUDDERSFIELD
Building Society

Experience has shown that the arrangements made by the Huddersfield to assist occupier borrowers have given the utmost satisfaction, and the service rendered has been greatly appreciated by builders' clients.

Write for information to The Huddersfield Building Society, Britannia House, 203, Strand, London, W.C.2, or to the Head Office, Britannia Buildings, Huddersfield. Andrew Stewart, C.A., Managing Director.

WHEN YOU INVEST—A HOUSE IS BEST

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

PRICES CURRENT OF MATERIALS—(Cont.)

IRON—	Per ton in London. £ s. d.	£ s. d.
Soft Steel Sheets, Black—		
Ordinary sizes, to 20 g. ..	17 5 0 ..	18 5 0
" " 24 g. ..	18 5 0 ..	19 5 0
" " 26 g. ..	19 5 0 ..	20 5 0
Sheets, Flat, Best Soft Steel, C. R. and C.A. quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	18 10 0 ..	19 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	20 10 0 ..	21 10 0
No. 1 quality £4 per ton extra.		
Flat and Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 9 ft. to 20 g.	20 0 0 ..	22 0 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g. ..	20 10 0 ..	24 0 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	22 10 0 ..	24 10 0
Sheets, Galvanised, Flat, Best quality—		
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	21 0 0 ..	24 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	22 0 0 ..	21 10 0
Best Soft Steel Sheets, 26 g.	23 10 0 ..	24 10 0
Cut Nails, 3 in. to 6 in.	19 10 0 ..	21 10 0
(Under 3 in. usual trade extras.)		

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

COPPER.

		s. d.
Seamless Copper tubes (basis)	per lb.	1 1
Strong sheet	"	1 3
Thin	"	1 4
Copper nails	"	1 3
Copper wire	"	1 3

PLUMBERS' BRASS WORK.

Delivered in London.
Stamped by Met. Water Board.

CRUTCH HEAD SCREW DOWN BIB COCKS FOR IRON. EASY CLEAN.

½ in.	¾ in.
32/-	47/- per doz.

CHROMIUM PLATED TOILET SCREW DOWN BIB COCKS FOR IRON. EASY CLEAN.

½ in.	¾ in.
42/-	61/6 per doz.

SCREW DOWN STOP COCKS FOR IRON.

¾in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
27/6	42/6	75/-	181/-	264/-	409/-	per doz.

SCREW DOWN STOP COCKS WITH TWO UNIONS FOR LEAD.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
46/6	68/6	106/-	205/-	307/-	590/-	per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.	
7/6	10/6	16/-	29/-	39/-	56/-	per doz.

HEAVY CROYDON BALL VALVES.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.		
36/-	59/6	96/-	205/-	278/-		per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.	
10/-	12/-	18/6	32/-	44/-	48/-	per doz.

BRASS FERRULES OF SLEEVES.

1½ in.	2 in.	3 in.	3½ in.	4 in.	
10/-	12/-	22/6	31/-	45/6	per doz.

DRAWN LEAD TRAPS WITH BRASS CLEANING SCREWS.

	1¼ in.	1½ in.	2 in.	3 in.	
8 lb. Lead P...	22/6	30/-	42/-	68/-	per doz.
8 lb. Lead S...	25/6	32/6	49/-	83/-	per doz.

SOLDER.—Plumbers', 1/1. Tinmen's, 1/3. Blowpipe, 1/5 per lb.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil, in pipes	per gallon	0 2 7
" " " in barrels	"	0 2 9
" " " in drums	"	0 2 11
Boiled " " in barrels	"	0 3 6
" " " in drums	"	0 3 2
Turpentine, in barrels	"	0 3 2
" in drums (10 gals.) ...	"	0 3 4
Genuine Ground English White Lead, per ton		50 0 0
(In not less than 5-cwt. casks.)		
Extra for 1-cwt. kegs over 5-cwt. casks is 2/9 cwt.		

GENUINE WHITE LEAD PAINT.

"Father Thames," "Nine Elms," "Park," "Supremus," "St Pauls," "Morganswyte," "Polacco," "J" Brand, and other best brands (in 14-lb. tins) not less than 5-cwt. lots £ s. d.

per ton delivered	69	0 0
Red Lead, Dry (packages extra). . per ton	38	0 0
Best Linseed Oil Putty ..... per cwt.	0	14 9
Size. XD quality ..... f'kn.	0	3 6

VARNISHES, &c.

	Per gallon.	
Oak Varnish ..... Outside	0	14 0
Fine Do. ..... "	0	16 0
Fine Copal ..... "	0	18 0
Pale Copal ..... "	1	0 0
Pale Opal Carriage ..... "	1	4 0
Best do. ..... "	1	12 0
Floor Varnish ..... Inside	0	18 0
Fine Pale Paper ..... "	0	18 0
Fine Copal Cabinet ..... "	1	2 0
Fine Copal Flatting ..... "	1	0 0
Hard Drying Oak ..... "	0	18 0
Fine Hard Drying Oak ..... "	0	19 6
Fine Copal Varnish ..... "	1	0 6
Pale do. ..... "	1	12 0
Best do. ..... "	1	2 6
Best Japan Gold Size	1	12 6
Best Black Japan	0	10 0
Oak and Mahogany Stain (water)	0	12 0
Brunswick Black	0	7 6
Berlin Black	0	14 0
Knotting (patent)	0	15 0
French and Brush Polish	0	12 0
Liquid Dryers in Terebene	0	9 0
Cuirass Black Enamel	0	7 3

THE SCOTTISH BUILDER

NEW BUILDINGS

ABERDEEN. — RECONSTRUCTION.—The T.C. have agreed to proceed with the reconstruction of the Skene-street school. The architect is Mr. A. B. Gardner, City Architect.

ABERDEENSHIRE. — HOUSES.—The C.C. Property and Works Committee is to proceed, subject to the approval of the Department of Health for Scotland, with four 4-apartment houses of stone construction at Lumsden, at £2,134; two 4-apartment, one 5-apartment, and one 3-apartment houses at Hatton of Cruden, at approximately £2,000.

AIRDRIE.—HOUSES.—The Corporation is to build from plans by Messrs. James Thomson and Son, Victoria-place, Broom Knollsroad, Airdrie, architects and quantity surveyors, 100 houses at Easter Mavisbank.

ANSTRUTHER. — ALTERATIONS.—The T.C. has agreed to carry out a scheme of alterations to the Lower Town Hall, for the purpose of adapting it for use as an A.R.P. casualty station.

BUCKIE.—ADDITIONS.—The Corporation has approved of the scheme for the reconstruction and additions to the Catholic School of St. Peter's.

COATBRIDGE.—EXTENSIONS.—A £1,200 extension of their machine shop and foundry is planned by Messrs. Burgess and M'Laren.

CUMNOCK.—HOUSING.—The T.C. has approved of a scheme submitted by the Burgh Surveyor and Housing Architect for a further 180 houses on sites at Car-road, Ayrroad, and Bank-avenue.

DUNDEE.—BUILDINGS.—Plans have been lodged at the office of the City Engineer: Black-street, garages, etc., for David Simpson; Forfar-road, villas for A. Thomson and Co., architects, Maclaren, Soutar and Salmond, 15, South Tay-street; Kingsway-terrace, bungalows for C. R. W. Gray, architects, Maclaren, Soutar and Salmond, 15, South Tay-street; South-road (156), alterations for Anderson, Gardner and Hepburn, architect, W. M. Wilson, 61, Meadowside.

EDINBURGH. — HEADQUARTERS. — The Amalgamated Society of Woodworkers have decided to erect new headquarters.

ELGIN.—HOUSES.—The Corporation, of which Mr. A. A. Purritt is Borough Architect and Surveyor, has approved plans for 20 houses at Duff-place, Bishopmills.

FALKIRK. — BUILDING.—At the Dean of Guild Court approval was given to a petition by the Provost, magistrates, and councillors of the burgh for warrant to erect 164 houses on a new site acquired at Cobblebrae, Bainsford. This new scheme, the estimated cost of which is £35,000, will comprise 12 blocks of four houses of three apartments; 15 blocks of two houses of four apartments; 14 blocks of four houses of four apartments; and 15 blocks of two houses of five apartments. The T.C. were also granted warrant to extend the nurses' home at the burgh fever hospital, at £3,500.

GLASGOW.—BUILDING.—Plans have been prepared by Mr. T. Somers, Office of Works, Glasgow, for a new hostel overlooking the Clyde, near Stockwell-street. Plans prepared for a new £6,000 garage at Glasgow South, by Mr. Thomson King, Architect, Central Station-chambers, Glasgow.

GLASGOW.—PREMISES.—Messrs. A. and D. Fraser, Ltd., automobile engineers, 41, Bothwell-street, Glasgow, are to erect a new motor-car service station at Anniesland-cross, and the firm have also acquired the premises at present occupied by the National Bank of Scotland, 69, Bothwell-street, which they are to convert into a showroom.

GREENOCK.—HOUSING.—The T.C. has purchased over 100 acres of ground at Maukinhill at a cost of £9,000. Several hundred municipal houses will be erected.

HAWICK.—HOUSING. — The Corporation has appointed Mr. John A. W. Grant, 25, Rutland-square, Edinburgh, as the architect for the development of the district of Burnfoot. Plans show the lay-out of 1,100 houses, etc., together with allotted sites for new church, school, etc.

BUILDING TRADE WAGES IN SCOTLAND

Following are grade rates authorised by the Scottish N.J.C. from April 1. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification	A	A^1	A^2	A^3	B	B^1
Craftsmen	1/8	1/7½	1/7	1/6½	1/6	1/5½
Labourers	1/3	1/2¾	1/2¼	1/2	1/1½	1/1¼

Aberdeen ..... A	East Fife (embraced by a line from Largo to Kingsbarns and eastward to the Coast). . B	Hamilton ..... A	Perthshire ..... A
Ayrshire ..... A	East Lothian ..... A	Inverness ..... A	Peterhead ..... A
Banff ..... B	Edinburgh ..... A	Inverurie ..... A^1	Renfrewshire ..... A
Berwickshire ..... A^2	Fifeshire (with the exceptions of towns in East Fife which are under Grade B) . . A	Kincardineshire ..... A^2	Rothesay ..... A
Bridge of Allan ..... A	Forfarshire ..... A	Kinross-shire ..... A	Roxburghshire ..... A^1
Broughty Ferry ..... A	Glasgow ..... A	Lanarkshire ..... A	St. Andrews ..... A
Clackmannanshire .... A	Greenock ..... A	Mid-Lothian ..... A	Selkirkshire ..... A^1
Doune ..... A		Monifieth ..... A	Stewartry ..... A^1
Dunblane ..... A		Moray and Nairn .... B	Stirlingshire ..... A
Dumbartonshire ..... A		Newport ..... A	Stornoway ..... A
Dumfriesshire ..... A^1		Peeblesshire ..... A^2	Tayport ..... A
Dundee ..... A		Perth ..... A	West Lothain ..... A
Dunoon ..... A			

This town has its own rates: Masons, 1/6; Carpenters, 1/6; Slaters, 1/6, Plumbers, 1/6½; Plasterers, 1/7 but 1/8 is paid owing to the scarcity at present; Painters, 1/6; and Labourers, 1/1½.

The information given in this table is copyright. Rates of wages in England and Wales are given on page 1048.

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

ORDINARY GLAZING QUALITY AND SELECTED GLAZING QUALITY.

per ft. super.		per ft. super.	
15 oz. O.Q.	2½d.	32 oz. O.Q.	5½d.
18 „ S.Q.	2¾d.	32 „ S.Q.	6¼d.
24 „ O.Q.	3¼d.	Obscured Sheet, 18 oz.	3d.
24 „ S.Q.	3¾d.	„ „ 24 „	4¼d.
26 „ O.Q.	3¾d.	Fluted ..... 21 oz.	9d.
26 „ S.Q.	4¼d.	Em'lld 18 oz., 5¼d., 24 oz.	6¾d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE AND FIGURED CATHEDRAL, ETC., IN CUT SIZES.

	Per ft. s. d.
Rolled plate, ¼ in.	5½d.
Rough cast double rolled, ⅛ in.	6¼d.
Rough cast double rolled, ¼ in.	6¾d.
Figured rolled, etc., white	6¾d.
Figured rolled, etc., tinted.	9¼d.
Rolled Sheet	6d.
White rolled cathedral	6d.
Tinted rolled cathedral	8¼d.
Rolled plate is the same price as rough cast double rolled.	
Reeded, Broad Reeded, Cross Reeded and Chevron Reeded, ¼ in. thick	0 10½
Wire Rolled, ¼ in. thick	0 9½
Wired Cast, ¼ in. thick.	0 9½
"Calorex" Sheet, 21 oz.	2 6
„ „ 32 oz.	4 0
„ Cast, ¼ in. thick	0 10
„ „ ⅜ in. thick	1 0
„ „ ½ in. thick	1 2

"VITA" GLASS.

Clearsheet—not exceeding 1 foot	1 0
„ „ 2 feet	1 3
„ over 2 feet	1 9
Polished plate not exceeding 1 foot	1 6
„ „ 2 feet	3 0
Cathedral—not exceeding 1 foot	1 0
„ larger sizes.	1 6
Horticultural Sheet and Cathedral "Vita" Glass. Sizes up to 24 inches by 18 inches or not exceeding 3 feet.	1 0
3/16 in. Wired Georgian Design. Sizes up to 96 inches long by up to 24 inches wide	2 6

LEAD, &c.

(Delivered in London.)	Per ton. £ s. d.
LEAD.—Sheet, English, 4 lb. and up	24 0 0
Pipe in coils	23 10 0
Soil pipe	29 0 0
Compo pipe	30 15 0

NOTE.—Country delivery, 20/- per ton extra, lots under 3 cwt. 4/- per cwt. extra and over 3 cwt. and under 5 cwt., 2/6 per cwt. extra. Cut to sizes, 4/- per cwt. extra.

Old lead, ex London area, at Mills ..... per ton £13 15 0

KILMARNOCK.—HOUSES.—The T.C. has approved a proposal by the Scottish Special Area Housing Association to build 700 houses on a 50-acre site at Shortlees Farm, Riccarton.

LANARKSHIRE. — FACTORIES. — Public Health Committee has approved of plans prepared by Messrs. Wylie, Wright and Wylie, architects, 204, West Regent-street, Blythswood, Glasgow, for the first development of the Lanarkshire industrial estates at Chapelhall and Larkhall, which will consist of two four-unit block factories and a three-unit block factory respectively. Plans are also in the hands of these architects for another industrial estate at Carfin, where six factory blocks will be erected.

LEITH. — WAREHOUSE.—The Dock Commissioners are to consider at an early date the erection of a grain warehouse at the Imperial Dock, at £100,000.

STRANRAER.—BUILDING.—The Dean of Guild Court has passed plans for the Wigtownshire Electricity Co., George-street, to erect a store at the rear of their premises, and the Stranraer Christian Brethren to carry out additions to the Mission Hall, in Greenvale-street.

TENDERS ACCEPTED

Aberdeen.—Grandstand and dressing accommodation at Linksfield Sportsfield, for T.C. :—Excavator, brick and concrete—*W. J. McLeod, £854; carpenter, joiner and ironmonger —*W. D. Forbes & Co., £2,180; roughcast and cement—*J. Scott & Son, Ltd., £276; plumber—*G. N. Haden & Sons, Ltd., £564. (All of Aberdeen.)

Aberdeenshire.—Bridge over the river Ythan at Ellon, to replace the existing bridge, for C.C.—*W. J. Anderson, Aberdeen, £22,000.

Ayr.—36 timber houses on one of the fields facing Mainholm-rd., for the T.C. :—*R. Hutchison (Builders), Ltd., Ayr., £19,018.

Dunfermline.—Reconstruction of the bridge carrying Blacklaw-rd. over Lyne Burn, for the T.C. :—*J. Ritchie & Sons, Dunfermline, £2,353.

Fife.—Removing existing masonry arch at Auchtermuchty cross-roads, constructing abutment walls and roadway, for C.C. W. Boyd, M.Inst.M. Cy.E., S., County-bldgs., Cupar :—

J. W. and B. Adamson, Auchtermuchty	£870	4	6
David Lairn & Son, Ladypark	808	16	6
*Streets & Co., Townhill, Dunfermline	686	0	0

Fraserburgh.—Timber houses, for the Corporation. Mr. W. H. Hamilton, Burgh Architect and Surveyor :—Excavation, brick and building—*A. Cheyne, £4,915; plumber and sanitary engineering—*J. MacNab, £2,048; joinery, carpentry and ironmongery—*Carle & Noble, £3,594, and William Bruce and Co., £3,389; plaster and lath—*W. MacDonald, £1,392; painting, glazing, etc.—*J. Stuart, £537; electrical fittings and installation, etc.—*Ferguson & Co., Ltd., £223. (All of Fraserburgh.)

Hamilton.—64 houses, Greenfield housing scheme, Burnbank. Gavin A. Thomson, architect. G. Allison, Burgh Surveyor, surveyor :—

Electric light installation—			
*W Young, Bothwell	£546	13	6
Glazier—			
*G. G. Kirk, Glasgow	223	11	6
Plaster and cement—			
*Wm. Jamieson & Son, Hamilton	1,976	12	0½
Plumber—			
*J. Shaw & Son, Uddingston	3,314	0	4½
Slater, tiler and roughcast—			
*Wm. Jamieson & Son, Hamilton	2,645	18	5
Carpenter, joiner and ironmonger—			
*Munro & Junor, Uddingston	8,258	19	8
Excavator, mason and brick—			
*E. Morgan & Co., Hamilton	14,229	17	6

Peterhead.—Reconstruction works in Links-rd., for the Peterhead Cottage Hospital Committee. Mr. John A. W. Grant, architect, Rutland-sq., Edinburgh :—Excavation, brick and building—*J. Shevan, New Pitsligo; plumber and sanitary engineering—*R. M. Taylor, Peterhead; slater and roughcasting—*A. Fordyce & Son, Peterhead; joinery, carpentry and ironmongery—*Taylor Brothers, Peterhead; plaster, lathing, cement, terrazzo and tile works, etc.—*W. Shaw & Co., Peterhead; heating, engineering and installation, etc.—*G. N. Haden & Co., Ltd., Glasgow.

Saltcoats.—58 houses, etc., for the Corporation. Messrs. Hugh Thomson & Son, architects and quantity surveyors, 60, Hamilton-st. :—Excavation, brick and building—*A. Gibson; joinery, carpentry and ironmongery—*D. Peebles & Co., Ltd.; plumber and sanitary engineering—*G. Martin & Sons, Paisley; painter, etc.—*Duncan MacAuslin & Sons, Stevenstown; plaster and lathing—*W. Sinclair & Sons; slater and roughcasting—*A. Ruthven & Co., Prestwick; electrical fittings and engineering, etc.—*D. Robertson & Son, Ardrossan; glazing, etc.—*D. Peebles; interior grates and allied works—*Forth & Clyde & Sunnyside Iron Co., Ltd., Glasgow. (Rest of Saltcoats.)

Scotland (H.M.O.W.).—Tenders accepted during week ending November 27 :—Carstairs, Criminal Lunatic Asylum, Lampits Farm, erection of staff houses, etc.—Wm. Arnott McLeod & Co., Ltd., Russell-rd., Edinburgh.

TRADE NEWS

Change of Address.

Messrs. Bryce, White and Co., Ltd., Deseronto Wharf, Wharf-road, London, N.1, inform us that from November 28 their address will be Deseronto Wharf, Langley, Slough, Bucks. Telephone Nos. Southall 2231 and Langley 232.

Change of Address.

Messrs. J. W. Roberts, Ltd., asbestos manufacturers, Armley, Leeds, inform us of the removal of their London office from 54, Old Broad-street to Bush House, W.C.2, as from November 28. The new telephone number will be Temple Bar 7311.

Manufacturers of Flush Doors.

A new company, Leaderflush, Ltd., has been formed for the manufacture of "Leaderflush" flush doors. New works, now nearing completion, have been established at Stapleford-road, Trowell, Notts. Telephone numbers are Ilkeston 623 and 624 (2 lines). Mr. R. A. Brough is the managing director of Leaderflush, Ltd.

A Brochure on Glass.

A generously illustrated brochure has been recently issued by Messrs. James Clark and Son, Ltd., Scoresby House, Glasshill-street, Blackfriars. The brochure indicates the various types of glass available and the multifarious uses to which it can be put, and gives a number of suggestions for the possibilities of glass for decorative, building and furnishing purposes.

Building Materials and the Public.

A number of firms manufacturing building and decorative materials are reinforcing their announcements to the trade by drawing the attention of the general public to their products. A medium in question is the "Radio Times," an advertisement of which is given elsewhere in this issue.

Norwich City Hall.

Messrs. Marryat and Scott, Ltd., lift manufacturers, 75, Clerkenwell-road, E.C.1, inform us that they supplied the special lift serving the platform of the tower of Norwich City Hall, illustrated in our issue for November 11. The firm have issued two leaflets dealing with their lifts, which are claimed to incorporate a number of useful features, including all-steel fireproof construction, fool-proof automatic control, threshold leveller for trucks and an overload rejection device.

The Morris Singer Company, architectural metal craftsmen, Dorset-road, Clapham-road, S.W.8, also inform us that they cast the bronze lions from models by the sculptor, Mr. Alfred Hardiman.

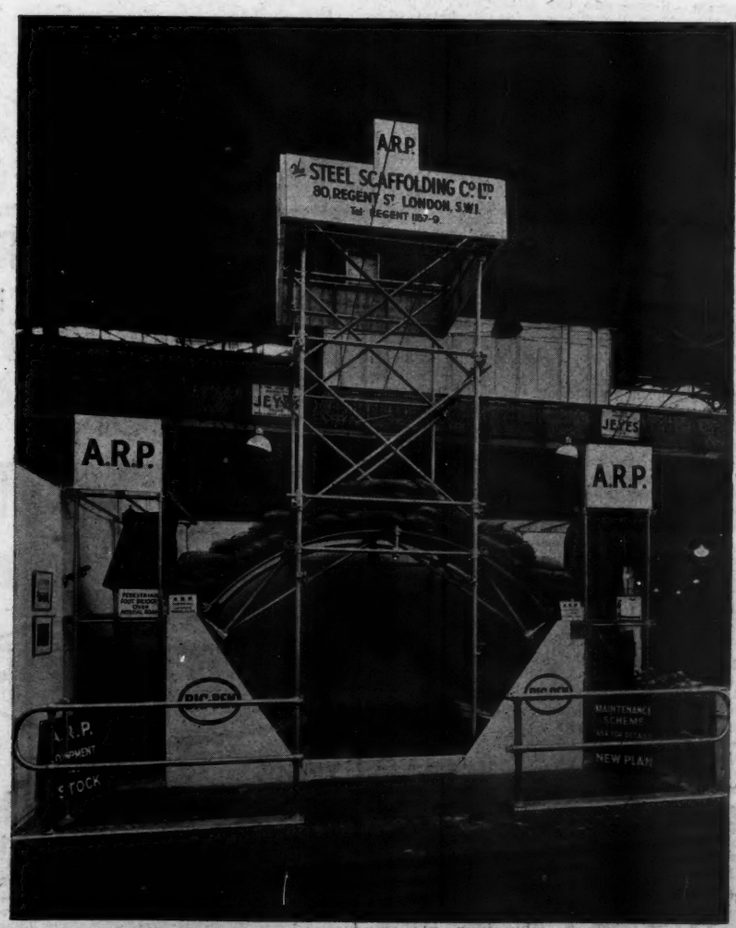
A.R.P.: Protection of Concrete.

In connection with A.R.P. shelters, Sealocrete Products, Ltd., Atlantic Works, Macbeth-street, Hammersmith, W.6, announce that their two products, Sealocrete concrete surface dressing, applied to concrete when in position, and Sealocrete double-strength premix solution, incorporated in the gauging water when constructing concrete, have been tested by the Home Office as a protection for concrete against the effects of mustard gas. The firm state that the treatment of roads or concrete enables the concrete, after being attacked by mustard gas, to be decontaminated by hosing down only, whereas in the normal course of events it is necessary to sprinkle earth on the affected surface.

Steel for A.R.P. Shelters.

The simplification of the construction of splinter- and blast-proof shelters for air-raid precautions by the use of "Big Ben" Steel Scaffolding is announced by the manufacturers, The Steel Scaffolding Company, Ltd., 80, Regent-street, W.1. The suggested design given in the accompanying illustration includes seating along each side, ample headroom and the sides of the trench cut at an angle to avoid collapse whilst excavating.

The roof is designed to be covered with layers of sand and turf as protection against incendiary bombs and splinters. It is claimed that shelters of this design can be erected and left in readiness, provided proper drainage is provided.



A STAND AT THE PUBLIC HEALTH EXHIBITION. (See this page)

TENDERS

The Editor welcomes authentic information for this feature from architects, surveyors or contractors. Items should reach 4, Catherine-street, Aldwych, W.C.2, not later than Wednesday morning.

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Abercrave.—Mass concrete retaining wall with stone facing adjoining River Tawe at Abercrave, Swansea Valley, for Breconshire C.C. J. M. Richards, M.I.M. & Cy.E., County Surveyor, County Offices, Watton, Brecon :—*W. L. Harpur, Savings Bank-chambs., Brecon, £1,151.

Aberdare.—Garage, for Western Welsh Omnibus Co., Ltd. T. Roderick & Sons, architects, Clifton-st. :—*G. W. Warlow, Warlow-st., Merthyr (approximately £7,000).

Ballycastle.—Improvements at Cottage Hospital, for Committee of Management :—*E. E. M'Cormick, Ballycastle, £4,414.

Bathavon.—Two semi-detached three-bedroom, non-parlour type houses at Northstoke, for R.D.C. F. W. Kelway, S. :—*H. Williams, Tower-rd., Warmley, Bristol, £771 1s.

Battersea. — Works for B.C. Internal and redecorative works at Latchmere-rd. baths—*Works Department, £650 8s.; periodical cleansing and redecorating works at Plough-rd. estate (12 dwellings) and Plough-rd. estate extension (4 dwellings)—Works Department, £213 18s.

Belfast.—Church hall at Orangefield, Cregagh. J. F. Hay, Belfast, architect :—*C. & W. M'Quoid, Ltd., Belfast.

Belfast.—Repairs and alterations at Botanic Gardens conservatory, for Corporation—*J. & T. Whiteside, Belfast, £1,556.

Belper.—Rebuilding laboratories and offices, after fire, at Silkoline Oil Works, for Dalton & Co., Ltd., The Oil Works. Wood & Bakewell, architects, St. James-st., Derby :—*Bowmer & Kirkland, Heage, Derby.

Birkenhead.—Electrical installations at 28 Council houses, for T.C. :—*Park Electrical Co., 86, Park-rd. North, Birkenhead, £130.

Birmingham.—Extensions to church, in Bournbrook-rd., Selly Oak, for Rev. W. Bull, St. Edward's Presbytery. Messrs. Harrison & G. B. Cox (F.), architects, 109, Colmore-row :—*J. Bowen & Sons, Ltd., Balsall Heath, Birmingham.

Birmingham.—Extensions and alterations to premises in Wharfdale-rd., Tysley, for Becketts of Birmingham :—*Smith Bros. (Construction), Ltd., 263-265, Stratford-rd., Sparkbrook, Birmingham.

Birmingham.—New works for the B.S.A. Co. W. G. Phillips, P.A.S.I., architect, 9, Victoria-st., London, S.W.1 :—*Higgs & Hill, Ltd., London, S.W.8.

Blandford.—16 houses, Milborne, for R.D.C. E. A. Down, F.S.I., F.F.A.S., architect, Ringwood :—

E. E. Boughton, Lytchett Maltravers	£8,097 11 9
F. Wyatt, Lytchett Minster	7,320 0 0
H. W. Marsh, Milton Abbas	6,500 0 0
W. J. Channing, Burnham-on-Sea	6,442 0 0
F. Box, Bournemouth	6,311 13 0
*W. R. Osmond, Burnham-on-Sea	6,286 0 0

Chester.—Electrical installation in connection with extensions at County General Hospital, Clatterbridge, for Cheshire C.C. Ernest Griffiths & Sons, M.M.I.Mech.E., engineers, 23b, The Temple, Dale-st., Liverpool :—*B. French, Ltd., Mill-st., Kidderminster, £6,841.

Ceiriog.—Public conveniences at Glynceiriog, Wrexham, and demolition of two cottages and erection of four non-parlour type houses at Pentrefelin, Oswestry, for R.D.C. R. W. Aubrey, S. :—

Public conveniences—

R. E. Jones, Oswestry	£765 0 0
W. F. Humphreys, Ltd., Wrexham	505 0 0
D. G. S. Clark, Wrexham	481 13 0
†A. Phillips, Wrexham	392 4 0

Houses—

W. F. Humphreys, Ltd., Wrexham	1,845 0 0
J. Deam & Co., Mont.	1,812 14 0
A. Phillips, Wrexham	1,733 14 6
D. G. S. Clark, Wrexham	1,684 0 0
R. E. Jones, Oswestry	1,638 0 0
†William Gittens & Co., Wrexham	1,625 0 0

Clones.—Health clinic for Monaghan Board of Health and Public Assistance.—John F. McGahon & Son, architects, 9-18, Exchange-bldgs., Dundalk :—

G. P. Walsh & Sons, Dublin	£5,370 0 0
P. McGeough, Monaghan	4,739 4 6
Gleesons (Ireland), Ltd., Galway	4,719 3 1
P. McKenna & Sons, City Mills, Armagh	4,335 0 0
*P. W. Goldrick, Clones	3,999 14 4

Coulsdon and Purley.—Supply and erection of 6 ft. and 5 ft. 6 in. fencing adjoining footpath to be constructed from Purley Bury-cl. to Purley Downs-rd., Sanderstead, for U.D.C. :—*Ryall & Edwards, Ltd., £131 2s. 2d. and £31 19s. 7d.

Coventry. — Premises for Messrs. Daimler Co., Ltd. Wm. G. Phillips, P.A.S.I., 9, Victoria-st., London, S.W.1 :—*Higgs & Hill, Ltd., London, S.W.8.

Crewe. — New premises for Messrs. Rolls-Royce, Ltd. W. G. Phillips, P.A.S.I., architect, 9, Victoria-st., London, S.W.1 :—*Gee, Walker & Slater, Ltd., Uttoxeter Old-rd., Derby.

Dromore (Co. Down).—Elementary school for Down County E.C. W. D. & R. T. Taggart, architects, Belfast :—*H. Laverty & Sons, Ltd., Belfast.

Ealing.—Works, for T.C. :—

Public convenience in (a) Ravenor Park, (b) Walpole Park and (c) Lammas Park—

Lees of Enfield, Ltd., Enfield—
(a) £1,150 (b) £1,000 (c) £1,050

Brown & Middleton, Ltd., S.W.1—
(a) £1,140 (b) £1,050 (c) £1,030

A. E. Brown, W.5—
(a) £1,176 (b) £1,098 (c) £1,001

W. J. Dickens, W.5—
(a) ‡£1,110 (b) ‡£1,015 (c) ‡£996

Conversion of pumping station, High-ln., Hanwell, into public convenience—

G. R. Emberton, W.5	£1,125 0
C. T. Ware, Greenford	1,046 10
‡O. J. Charlton & Sons, W.7	946 0
A. E. Brown, W.13	895 0

Land drainage at Horsenden Park—

*G. B. Stanley & Co.	£543 17

Electrical wiring at Coston Senior girls' school (new block)—

Mead Electric Co., Ltd.	£526 0
Elmbridge Electric, Ltd.	509 16
Unilectric, Ltd.	482 17
Rawlings Bros., Ltd.	462 12
H. E. Keen & Co., Ltd.	443 3
Power & Lighting Installation Co.	438 3
W. H. Gaze & Sons, Ltd.	436 2
Page & Girling, Ltd.	422 9
Mead & Jeffery, Ltd.	420 15
Fullick & Loosley, Ltd.	411 4
Watson & May	405 18
Central Electric Co.	402 16
Cox & Hembrow, Ltd.	388 16
J. Leech	382 15
*Springvale Electric Co.	342 4

Fencing at Walford school site—

Lewisham Timber Co., Ltd.	£1,734 7
Rowland Bros. (Timber Merchants), Ltd.	1,364 0
Morgan & Co. (Strood), Ltd.	1,332 11
Matthew & Co.	1,303 17
Peerless Fence & Products, Ltd.	1,263 8
Lawsons (Whetstone), Ltd.	1,259 4
Thames Steam Saw Mills, Ltd.	1,207 9
B. R. Palmer & Co.	1,199 3
Wardley, Merchant & Co., Ltd.	1,148 3
A. Turner & Son, Ltd.	1,122 12
S. C. Morgan & Co., Ltd.	1,117 10
Rvall & Edwards, Ltd.	1,107 8
Fencing (Shepperton), Ltd.	1,103 4
Quenby, Fry & Co., Ltd.	1,053 7
*H. J. Ford	900 0

Ennis.—Sewerage scheme, for U.D.C. P. J. Sheahan, consulting engineer, 47, O'Connell-st., Limerick. Quantities by E. :—

Geo. P. Walsh, Ltd., Dublin	£24,868 0 0
Sth. of Ireland Asphalte Co., Dublin	22,108 10 6
T. O'Mullane, Mitchelstown	21,844 10 1½
McNally & Co., Dublin	20,777 7 7
Murphy & Black, Limerick	19,536 2 3
T. McCarthy, Banteer, Co. Cork	18,000 0 0
J. Molloy & Sons, Ltd., Ballina	17,667 0 0
H. MacDonald, Galway	17,521 11 4
Leahy's Contractors, Thurles	16,703 1 9
J. McNally & Co., Galway	16,250 0 0
*P. C. McMahon, Ennis	16,217 17 0

DON'T TENDER UNSUCCESSFULLY

SECURE CONTRACTS WITH

THE STEEL SCAFFOLDING CO., LTD.

Imperial House, 80, Regent St., London, W.1
Telephone: Regent 1137

Erith.—Two sub-stations (a) near cemetery, Brook-st., and (b) near The Pantiles, Little Heath-rd. E. and S. :—

	(a)	(b)
C. A. Trayte, Sevenoaks	£409 11 0	£410 1 2
Arthur Bryans, Dartford	407 0 6	383 10 0
C. F. Godwin & Son, Erith	401 15 5	419 1 7
H. Friday & Sons, Erith	394 0 0	397 15 0
Kent & Sussex Building Co., Ltd., Erith	372 0 0	368 0 0
W. V. Holmes, Belvedere	371 19 2	371 12 0
W. H. Neale, Ltd., Bexley	396 14 2	383 15 8
L. F. Phillips, Erith	386 9 9	397 13 1
*S. H. Alabaster, Ltd., Welling	358 0 4	360 18 2

Faversham.—42 houses and incidental work, Lower-rd., for T.C. S. Percy Andrews, B.S., 20, West-st. :—Houses—*Operative Builders & Decorators, Ltd., Park-lane, Birchington, £15,230; sewers—*E. D. High & Sons, 1, Bayford-rd., Sittingbourne, £520 10s. 6d.

Gateshead.—Church, Ashwood-gdns., for Trustees. Cordingley & McIntyre, architects, The College, Durham :—*J. & W. Lowry, Corporation-st., Newcastle-on-Tyne.

Hackney.—Houses, for B.C. : — Warwick-grove site—General building work—*Ford & Walton, Ltd., £92,250; fireproof floors—*Flooring Contracts, Ltd., £16,215; joinery—*Rippers, Ltd., £10,055 17s. 8d.; plastering and granolithic work—*Plastering, Ltd., £7,631 11s. 7d.; tile wall linings—*W. B. Simpson & Son, Ltd., £6,269 15s. 6d.; iron balustrades, railings, etc.—*T. W. Palmer & Co., £3,530 10s. 6d. Sanitary fittings—*John Bolding & Sons, Ltd., £3,207 8s. 2d. Springfield site—General building work—*John Laing & Son, Ltd.—£92,866: fireproof floors—*Flooring Contracts, Ltd., £15,431; asphalt—*Permanite, Ltd., £148 8s. 10d.; joinery—*Rippers, Ltd., £9,901 7s. 10d.; plastering and granolithic work—*John Laing & Son, Ltd., £7,439; tile wall linings—*W. B. Simpson & Son, Ltd., £6,256 18s. 2d.; iron balustrades, railings, etc., *T. W. Palmer & Co., £3,761 16s. 1d.; sanitary fittings, *W. N. Froy & Sons, Ltd., £3,242 14s. 11d.; electrical work (both schemes), *Holliday, Hall & Stinson, Ltd., £8,993 1s.

Hammersmith.—Works, for B.C. :—100 flats at Becklow-gardens—

Holland, Hannen & Cubitts, Ltd.	£86,445
Dove Bros., Ltd.	86,346
Trollope & Colls	86,037
F. & H. F. Higgs, Ltd.	85,665
Holliday & Greenwood	85,164
Prestige & Co., Ltd.	84,682
J. Mowlem & Co., Ltd.	84,494
R. J. Rowley, Ltd.	84,465
Allen Fairhead & Sons, Enfield	84,018
A. T. Rowley, Ltd.	82,419
‡Kirk & Kirk, Ltd., Atlas Works, Putney	79,706

Electricity sub-showroom, on south-east corner of site of Beadon-rd. sub-station—

A. E. Pascall	£970
G. W. Clarke	870
Frederick Coyle & Co., Ltd.	840
‡William Lowe & Son, Ltd.	838

Hebburn-on-Tyne.—6 public conveniences, for U.D.C. E. G. Lediard, S. :—‡David Glen, Ltd., Bk. Queen's-rd., Jarrow-on-Tyne.

Hebburn-on-Tyne.—Electrical installation in over 100 Council houses, for U.D.C. E. G. Lediard, S. :—*J. McCabe, Albert-rd., Jarrow-on-Tyne.

Hemel Hempstead.—Alterations and additions to children's homes, for Herts C.C. P. W. Prevett, F.F.A.S., Cambridge House, Marlowes, Hemel Hempstead :—*A. L. Seldon & Son, 78, Marlowes, Boxmoor, Hemel Hempstead.

High Wycombe.—Reconstruction of omnibus garage, for L.P.T.B., 55, Broadway, S.W.1. Wallis, Gilbert & Partners, architects, 15, Elizabeth-st., London, W.1 :—*J. Honour & Son, Ltd., Tring.

Holborn.—Works, for B.C. :—Canopy over entrance to town hall; Borough Engineer and Surveyor—‡Charles Spreckley & Co., Ltd., £384. Reconstruction of Harpur-mews urinal, ‡Whitbys, Ltd., £355 10s. Reconstruction of Herbrand-st. urinal, ‡H. J. Glew, £297 17s. Reconstruction of Three Cups-yard urinal, ‡W. T. Lawrence & Son, £377.

Hull.—Relief station in Regent-st., for T.C. D. Harvey, City Architect :—*Robinson & Sawdon, Ltd., 97, Alexandra-rd., Hull, £3,043.

Lambeth.—Works, for B.C. :—

Decorative and repair works at Council Maternity Home—

A. King & Co. (Brixton), Ltd.	£366 3 3
J. Appleby & Sons, Ltd.	220 0 0
Crabb & Son, Ltd.	206 0 0
H. Bragg & Sons, Ltd.	195 15 0
H. D. Harding, Ltd.	185 0 0
W. Bugg & Sons	170 0 0
‡Borough Engineer	166 0 0
W. A. King & Sons (Brixton), Ltd.	157 0 0

Adaptation as offices of 41, Stockwell-green—

A. King & Co. (Brixton), Ltd.	£467 0 0
J. Appleby & Sons, Ltd.	434 0 0
Sykes & Son, Ltd.	427 0 0
Orchard & Moody	377 0 0
G. Glover & Sons	364 0 0
F. Rodwell & H. Brightwell	310 0 0
H. T. Oliver & Sons, Ltd.	305 0 0
‡H. D. Harding, Ltd., Vassall-Works, Vassall-rd., S.W.9	301 0 0

Lancashire.—(a) Reconstruction of Mill Wood bridge, and (b) widening Sankey Station bridge, for C.C. Peter Schofield, County S. and Bridge-master, Preston :—(a) *Whiteley, Moran & Co., Ltd., 1, Tithebarn-st., Liverpool, 2; (b) *Drake Bros. (Haslingden), Ltd., Holden Mill House, Haslingden, Rossendale.

Leeds.—Wiring complete of 96 houses and cottage flats, and wiring complete of 507 houses and cottage flats, Belle Isle housing estate (Area No. 2), for T.C. R. A. H. Livett, Housing Director, 26, Great George-st.:—*Waid & Co. (Dewsbury), Ltd., 15, Northgate, Dewsbury.

Leeds.—Internal decoration of 96 houses and cottage flats and 507 houses and cottage flats at Belle Isle housing estate, for T.C. R. Livett, Director of Housing, 26, Great George-st.:—96 houses and cottage flats—*Walker Bros., Tramway-st., Chapeltown-rd., Leeds, 7. 507 houses and cottage flats—*G. Roberts, Cross-ln., Farnley, Leeds.

Leicester.—Out-patients' department and clinics as additions to existing buildings, for Board of the Royal Infirmary. Pick, Everard, Keay & Gimson, F.R.I.B.A., architects, 6, Millstone-ln.:—*H. Herbert & Sons, 33, Millstone-ln., Leicester, £20,000.

Lewisham.—Improvement works at the open-air bath, for B.C.:—

Henry Kent (Builders), Ltd.	£3,189
Walker, Clinging & Co.	2,994
H. & J. Taylor (Contractors), Ltd.	2,708
Greenaway & Son	2,690
Kent & Sussex Building Co., Ltd.	2,655
J. Watt (Catford), Ltd.	2,627
‡Truett & Cox (Surrey), Ltd.	2,577

Litherland.—(a) Council offices and town hall; (b) supply and erection of heating, ventilation and domestic hot water services in connection with same, for U.D.C. G. de C. Fraser, architect, 27, Dale-st., Liverpool:—(a) *Hughes & Stirling, Bootle, Liverpool, £19,820; (b) *C. Seward & Co., Ltd., Preston, £2,030.

London.—Works, for L.C.C.:—
Work at Ladywell institution—
(a) New nursery—

Holliday & Greenwood, Ltd.	£53,278	0	0
J. Garrett & Son, Ltd.	52,676	0	0
G. E. Wallis & Sons, Ltd.	50,897	0	0
Patman & Fotheringham, Ltd.	50,333	0	0
J. Crewdson, Horley	50,265	0	0
Wm. F. Blay, Ltd.	49,948	0	0
Prestige & Co., Ltd.	49,750	0	0
The Ashford Builders Co., Ltd.	49,720	0	0
Leslie & Co., Ltd.	49,468	0	0
Thomas & Edge, Ltd.	49,425	0	0
Harry Neal, Ltd.	49,224	0	0
Rowley Bros., Ltd.	48,988	0	0
Truett & Steel, Ltd.	48,934	0	0
W. H. Gaze & Sons, Ltd., Kingston	48,283	0	0
Allen Fairhead & Sons, Ltd., Enfield	48,157	0	0
C. Miskin & Sons, Ltd., St. Albans	47,790	0	0
Halse & Sons, Ltd.	47,752	0	0
‡Stewart & Partners, Ltd., 105, Baker-st., London, W.1 (Architect's estimate, £48,489.)	45,786	15	6

(b) Modernisation—

G. E. Wallis & Sons, Ltd.	£19,329	0	
Holliday & Greenwood, Ltd.	18,718	0	
Wm. F. Blay, Ltd.	18,711	0	
Prestige & Co., Ltd.	18,650	0	
J. Crewdson, Horley	18,515	0	
Thomas & Edge, Ltd.	18,416	0	
Harry Neal, Ltd.	18,266	0	
J. Garrett & Son, Ltd.	18,224	0	
Leslie & Co., Ltd.	18,181	0	
Rowley Bros., Ltd.	18,025	0	
The Ashford Builders Co., Ltd.	17,962	0	
Allen Fairhead & Sons, Ltd., Enfield	17,834	0	
W. H. Gaze & Sons, Ltd., Kingston	17,333	0	
‡Stewart & Partners, Ltd., 105, Baker-st., London, W.1	17,147	16	
C. Miskin & Sons, Ltd., St. Albans	16,324	0	
Truett & Steel, Ltd.	15,974	0	
Halse & Sons, Ltd.	15,451	0	

(Architect's estimate, £17,830.)
Maternity block, Hackney Hospital—

Prestige & Co., Ltd.	£46,240	0	0
E. A. Roome & Co., Ltd.	45,377	0	0
Gee, Walker & Slater, Ltd.	44,875	0	0
Rowley Bros., Ltd.	44,763	0	0
C. Miskin & Sons, Ltd., St. Albans	44,763	0	0
A. E. Symes, Ltd.	44,692	0	0
The Ashford Builders Co., Ltd.	46,600	0	0
Foster & Dicksee, Ltd.	44,561	0	0
Patman & Fotheringham, Ltd.	44,433	0	0
Stewart & Partners, Ltd.	44,268	16	3
Haymills (Contractors), Ltd.	44,126	0	0
E. Clarke & Sons, Ltd., New Malden	44,114	17	8
C. P. Roberts & Co., Ltd.	43,369	0	0
‡W. H. Gaze & Sons, Ltd., Kingston	42,173	0	0

(Architect's estimate, £43,782.)
Electrical installation, Joyce Green Hospital, Dartford—

The Berkeley Electrical Engineering Co., Ltd.	£11,210	10	0
F. H. Wheeler & Co., Ltd.	11,105	15	0
Bell Bros. & Co. (London), Ltd.	10,975	0	0
Pinching & Walton	10,636	3	0
Alexander Hawkins & Sons	8,975	0	0
Atozed (London), Ltd.	8,675	0	0
W. J. Furze & Co., Ltd.	8,619	15	0
Samuel Reed & Sons	8,590	0	0
Buchanan & Curwen, Ltd.	8,550	0	0
T. Clarke & Co., Ltd.	8,476	0	0
Read & Partners, Ltd.	8,430	0	0
Archibald Meckhonik	8,395	0	0
Electrical Installations, Ltd.	8,170	0	0
‡Troughton & Young, Ltd., 143, Knightsbridge, S.W.1 (Chief Engineer's estimate, £8,500.)	7,142	19	1

Nurses' home, etc., St. Francis' Hospital, Dulwich—

Rice & Son, Ltd.	£65,100
Prestige & Co., Ltd.	65,035
L. & W. Whitehead, Ltd.	64,850
Higgs & Hill, Ltd.	60,800
G. E. Wallis & Sons, Ltd.	60,305
C. H. Gibson, Ltd.	60,049
J. Garrett & Son, Ltd.	60,018
J. & C. Bowyer, Ltd.	59,947
E. Clarke & Sons, Ltd., New Malden	59,824
R. Mansell, Ltd., Croydon	59,628
F. R. Hipperson & Sons, Ltd.	59,246
E. D. Winn & Co., Ltd.	58,893
W. H. Gaze & Sons, Ltd., Kingston	58,883
Leslie & Co., Ltd.	58,817
Thomas & Edge, Ltd.	58,500
Halse & Sons, Ltd.	57,975
Galbraith Bros., Ltd.	57,800
‡Stewart & Partners, Ltd., 105, Baker-st., W.1	54,290

(Architect's estimate, £59,401.)
(Rest of London.)

¶London (Air Ministry).—Contracts placed for the week ended November 19:—Croydon, purchase and erection of hangar, Redpath, Brown & Co., Ltd., Glasgow; Cannock Chase, transportation shed, Boulton & Paul, Ltd., Norwich; Norwich, construction of station, J. Gerrard & Sons, Ltd., Manchester; sub-contractors—steelwork, E. Wood & Co., Ltd., Manchester; electrical, Alpha Manufacturing and Electrical Co., Ltd., London, S.W.4; heating, Brightside Foundry and Engineering Co., Birmingham; Northolt, builders' work, F. Troy & Co., Ltd., London, N.W.3; Bassingbourn, artificers' works, Kerridge (Cambridge), Ltd., Cambridge; Kirton Lindsey, construction of station, John Laing & Son, Ltd., London, N.W.7; sub-contractors—steelwork, Fairfield Shipbuilding & Engineering Co., Ltd., London, S.W.1; electrical, Electrical Installations, Ltd., London, S.W.1; heating, Matthew Hall & Co., Ltd., London, N.W.1; Little Rissington, artificers' works, Charles Lamburn, Ltd., Dry Sandford; South Farnborough, steel structure for bending tests, Dawnays, Ltd., London, S.W.11; Wittering, builders' work, F. Perks & Son, Ltd., Long Eaton; Hawkinge, builders' work, R. J. Barwick, Dover; Duxford, builders' work, H. C. Janes, Ltd., Luton; Kemble, builders' work, Downing, Rudman & Bent, Ltd., Chippenham; Rochford, external services and finishings to hutted camp, Demolitions & Construction Co., Ltd., London, S.W.1.

¶London (H.M.O.W.).—Tenders accepted for the week ended November 17:—Metal correspondence trays—Farwig & Bullock, Ltd., 23a, Perry Vale, Forest Hill, S.E.23. Chinaware—G. Jones & Sons, Ltd., Crescent Potteries, Stoke-on-Trent. Adaptors—Fred Kidd & Son, Prince Regent-st., Stockton-on-Tees, and G. & W. Purser, Ltd., Palmer-st., Birmingham. Waterproof capes—Greengate & Irwell Rubber Co., Ltd., Greengate Works, Manchester. Carlisle Castle—erection of gymnasium and drill hall—J. & R. Bell, Ltd., Nelson-st., Carlisle. Headley Down Telephone Exchange—erection—Sherfield Bros., Castle-st., Farnham. Galvanised ironware—Pratt Bros., Ltd., Galvanic Works, Birmingham, 12. Dustbins—Walker Bros., Ltd., Staffordshire Galvanising Works, Walsall. Blackburn Royal Ordnance Factory—glazed partitions in tool shop and east and west blocks—Henry Hope & Sons, Ltd., Smethwick, Birmingham. Harmondsworth Ministry of Transport Experimental Station—erection of laboratory and extension to workshops and lavatory—Sloggetts (Contractors), Ltd., 209, High-st., Hampton Hill. Employment Exchange, Openshaw, Manchester—erection—E. Marshall & Sons, Ltd., Stamford Sawmills, Ashton-under-Lyne. Peterborough Telephone Exchange—new passenger lift—Bagley & Cooper, Alma-rd., Peterborough. Newcastle Station Sorting Office—external and internal painting—Thos. W. Paxton, 7, Bowden-ter., Gosforth. Easingwold Civilian Anti-Gas School—erection of fireproof building—William Birch & Sons Ltd., Spen-ln., York. Teddington Admiralty Research Laboratory—asphalt to felt roofs—The Limmer & Trinidad Lake Asphalt Co., Ltd., Steel House, Tothill-st., Westminster, S.W.1. Waddon Ministry of Labour Government Training Centre—roof felting—F. McNeil & Co., Ltd., 52, Russell-sq., W.C.1. Broadmoor Criminal Lunatic Asylum—tar-paving airing courts No. 4 and 7—Chittenden & Simmons, Ltd., Thames House, Millbank, S.W.1.

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London.—Superstructure of the new police station at Southend Village, for Metropolitan Police. G. Mackenzie Trench (F.), Police Architect and Surveyor:—

Higgs & Hill, Ltd.	£37,199
Ford & Walton, Ltd.	36,162
W. H. Lorden & Son, Ltd.	36,091
Geo. Parker & Sons, Ltd.	35,847
Galbraith Bros., Ltd.	35,638
Hall, Beddall & Co., Ltd.	35,523
James Carmichael (Contractors), Ltd.	35,427
E. H. Burgess, Ltd.	34,690
W. & C. French, Ltd.	34,561
L. & W. Whitehead, Ltd.	34,227
Rice & Son, Ltd.	33,646
*Henry Kent (Builders), Ltd.	33,418

Lurgan.—Nurses' home at union hospital, for B.G. S. M'Ilveen, architect, Belfast:—*Laffin, Ltd., Lisburn, £15,498.

Macclesfield.—(a) Park lodge in Maple-av., South Park, and new lodge, conveniences, offices and aviary in West Park, Prestbury-rd.; (b) development of bandstand area in South Park, for T.C. E. Hamson, B.S.:—(a) *R. J. Massey, Ltd., Chesterrd., Macclesfield, South Park £882, and West Park £1,482; (b) *Cooper Bros., Ltd., Catherine-st., Macclesfield, £2,274 18s.

Mexborough.—Engineering services for proposed public baths, for U.D.C. Pick, Everard, Keay & Gimson, architects, 6, Millstone-ln., Leicester:—*W. Freer, Ltd., 36, Wellington-st., Leicester, £5,120.

Mexborough.—Branch Co-operative Stores, Main-st., for Barnsley British Co-operative Society, Ltd., Wellington-st., Barnsley. N. A. Whitham, architect, 25, Church-st., Barnsley:—*Works Department, Wellington-st., Barnsley.

Middlesbrough.—Shops in St. Aidans-cres., for Middlesbrough Co-op. Society. Plans by T. T. Gray, 90, Westmorland-rd., Newcastle-on-Tyne:—*C.W.S. Building Dept., West Blandford-st., Newcastle-on-Tyne.

Middlesex.—Works, for C.C.:—
Council senior school, Bacon-ln., Roe Green, Kingsbury—

Foster and Dicksee, Ltd.	£85,445		
L. & W. Whitehead, Ltd.	85,061		
W. Lawrence & Son, Ltd.	84,687		
H. Knight & Son	84,035		
Gee, Walker & Slater, Ltd.	81,572		
A. Monk	80,209		
G. H. Denne & Son, Ltd.	79,700		
Wm. Lacey (Hounslow), Ltd., Hounslow	79,232		
G. E. Wallis & Sons, Ltd.	78,937		
Ford & Walton, Ltd.	78,887		
W. S. Try, Ltd., Uxbridge	78,327		
‡A. Roberts & Co., Ltd., Kensington	78,210		
J. M. and I. school, Cherry-ln., West Drayton—			
R. Costain, Ltd.	£37,550	0	0
J. W. Jones, Weybridge	35,500	0	0
Fassnidge, Son & Norris, Ltd., Uxbridge	33,470	0	0
Limpus & Son, Ltd., Kingston	33,396	0	0
J. L. Kier & Co., Ltd.	33,364	6	11
A. & B. Hanson, Ltd., Southall	33,280	0	0
A. T. Rowley (London), Ltd.	33,226	0	0
W. J. Dickens	33,062	0	0
W. J. Marston & Son	32,988	0	0
Wm. Moss & Sons, Ltd.	32,921	3	7
‡W. S. Try, Ltd., Uxbridge	32,702	0	0
Y. J. Lovell & Son, Gerrards Cross	32,359	0	0
School clinic, County Library branch, and Maternity and Child Welfare Centre in Honeypot-ln., Stanmore—			
G. A. Smith, Ltd., Watford	£12,237	0	0
H. E. Winskell, Barnet	11,890	9	11
Thomas Bros., Wembley	11,836	11	2
A. H. W. Todman & Son, Ltd., Harrow	11,826	2	0
Stevens & Sons	11,683	0	0
A. E. Symes, Ltd.	11,521	0	0
Speirs, Ltd.	11,231	0	0
H. H. & F. Roll, Ltd., Epsom	11,211	0	0
Sloggetts (Contractors), Ltd., Hampton Hill	10,994	0	0
‡J. C. Rackham, Harrow Weald (Rest of London.)	10,861	7	0

Middlestone Moor.—Alterations and additions to school, for Durham C.C.:—*W. Wilson, Spennymoor, Co. Durham, £2,695 12s.

Minster (Sheppey).—Licensed premises, Harps Farm estate, Minster-rd., for Ind, Coope & Allsopp, Ltd., Burton-on-Trent. Percy V. Holway, architect, 239, High-st., Sheerness:—*Bennett & Smith, High-st., Mile Town, Sheerness.

Mochras.—Sea defence works scheme near Mochras, between Harlech and Barmouth, for Merioneth Rivers Catchment Board:—*Davies Brothers, Barmouth.

Newcastle-on-Tyne.—20 houses in Clovelly-av. White & Pearson, architects, 33, Groat-market:—*J. McEwan, Ltd., 20, Croftway, Newcastle.

Newcastle-under-Lyme.—Pavilion in connection with proposed playing fields at Roe-ln. farm playing fields, for T.C. S. A. Wilmot, architect, Estate Office, Bournville:—

Harvey Jones	£4,230 0
Madew & Wardle	3,362 8
Maddock Bros., Ltd., Audley	3,228 18
H. Grant & Son	3,147 0
J. W. Walton, Meadow-rd., Kidsgrove	3,135 17
Turner & Richards	3,105 0
W. C. Perkins	3,100 15
Lockwood & Sproston	3,098 11
T. S. Hedley & Sons, Ltd.	2,970 0
*Phillips Bros., Ltd., 21, May-st., Silverdale	2,741 14

(Rest of Newcastle.)

Northampton.—Branch premises, shops, offices and flats, Drum-ln. and Osborne's-jetty, for Martins Bank, Ltd., Water-st., Liverpool. Bromley, Cartwright & Waumsley, architects, 6, Clarendon-st., Nottingham:—*Henry Martin, Ltd., Thenford-st., Northampton.

Oldbury.—Gymnasium at Albright senior schools, for T.C. C. E. M. Fillmore, A.R.I.B.A., architect, Newhall-st., Birmingham:—

*J. & F. Wootton, Ltd., Pinfold, Bloxwich, Walsall £3,240

Oldham.—Rebuilding the "Abbey Inn" p.h., West-st., for Oldham Brewery Co., Ltd., 40, Coldhurst-st. C. T. Taylor, Roberts & Bowman, architects, 10, Clegg-st.:—Excavating, draining, brickwork—*Whitworth, Whittaker, Ltd.; masonry—*Grundy, Sons & Co., Middleton; carpenter and joiner—*Alfred Hoggins; slating—*Joseph Jackson (Oldham), Ltd.; plastering—*S. Robinson. (Rest of Oldham.)

Oxford.—New crematorium, etc., Bayswater-rd., Headington, for Oxford Crematorium, Ltd. Harold Orr, architect, Woodlands, Bow Brickhill, Bletchley:—*J. Parnell & Son, Rugby.

Penistone.—24 houses, Towngate housing site, Thurlstone, nr. Penistone, for U.D.C. Lunn, Heppenstall & Lunn, architects, Milnsbridge, Huddersfield:—†E. Cutts, Ltd., Doncaster, £9,382.

Peterborough.—Pumping station, for Crowland and Cowbit Washes Drainage Board. R. B. Grantham, Sons & Farran, consulting engineers, 1, Princes's-st., Doncaster:—†Jellings Builders, Ltd., Walpole-st., Westwood Bridge, Peterborough.

Portsmouth.—Erection of 30 Lord Mayor's Eventide Homes in Northern-parade:—*Portsmouth and Gosport Builders' Guild.

Roscommon.—13 cottages at Strokestown, for County B.H.:—*M. Brennan, Ltd., Ballyleague, £5,419.

Rugby.—Northern water supply (contract No. 2), for R.D.C. J. D. & D. M. Watson, MM.Inst.C.E., engineers, 3, Central-bldgs., Westminster, S.W.1. Quantities by engineers:—*Wm. Mulcaster & Co., Ltd., Haslington, Crewe, £19,406 2s. 1d.

St. Albans.—Admission hospital unit, Hill End Hospital, Hill End, for Herts C.C. J. M. Sheppard & Partners, architects, 38, Bedford-pl., W.C.1. Gardiner & Theobalds, Q.S., 96, Gower-st., W.C.1:—*H. E. Winskell, The Cott, Wood-st., Barnet, £16,386.

Sheffield.—20 flats, Greenhill-av., for J. G. Graves Charitable Trust. J. Mansell Jenkinson, architect, 18, Norfolk-row:—*A. Bradbury & Son, Sheffield.

Shrewsbury.—Alterations to Butchers' Market, General Market Hall. A. W. Ward, B.S.:—*Geo. Edwards & Son, Smithfield-rd., Shrewsbury.

Smethwick. — Alterations and additions to Crocketts-ln. infants' council school, for E.C.:—*G. H. & H. E. Marshall, Hawthorne-st., Smethwick, Birmingham. £623.

Southall.—122 houses and bungalows, 2 shelters and a pump-house on Dormers Wells housing site, for T.C.:—

S. E. Moss & Sons	£61,278 0 0
Leyland Construction Co., Ltd.	58,576 0 0
J. W. Jones (Weybridge), Ltd.	57,067 0 0
M. J. Gleeson, Ltd.	54,900 0 0
J. Gerrard & Sons, Ltd.	54,849 0 0
Joseph Cartwright, Ltd.	54,171 0 0
C. Davis & Co.	52,401 19 11
G. H. Burgess	51,750 0 0
Perry (Ealing), Ltd.	51,132 0 0
W. J. Kew (Contractors), Ltd.	49,489 0 0
Knight Bros.	49,195 0 0
*J. A. Wise	47,094 0 0

Stafford.—Pumping-station buildings, for T.C.:—‡F. Espley & Sons, Stafford, £5,197.

Stoke-on-Trent.—Erection of Chell Heath senior school, for E.C. J. R. Piggott, Chief Architect:—†Cooper Bros. (Builders), Ltd., Catherine-st., Macclesfield, £29,400.

Stoke-on-Trent.—Stores, Milton-rd., Sneyd Green, for Burslem and District Co-operative Society, Ltd., 10, Newcastle-st., Hanley, Staffs. Watkin & Maddox, architects, National Provincial Bank-chambs., Burslem:—*J. Cooke, May Bank, Newcastle-Staffs.

Stoke-on-Trent.—Licensed premises, Green Bank-rd., Tunstall, for Holt Brewery Co., Ltd., Holt-st., Birmingham. Venables & Barker, architects, Cheapside, Hanley:—*T. H. Godwin, Raymond-st., Hanley, Staffs.

Strood.—Building on quarry site at Oak-st., Frindsbury, to be used as a decontamination and training centre, etc., for R.D.C.:—

*Parham & Co., Gillingham £1,775

Sunderland.—Hall in Rutland-st., for Salvation Army, 101, Queen Victoria-st., London, E.C.4:—*J. Carter & Sons, Deptford-ter., Sunderland.

Sunderland.—Reconstruction of premises at Holmside, for Steel & Co. G. E. Matkin, architect, Barclays Bank-chams., Fawcett-st.:—*J. Huntley & Son, Marion-st., Sunderland.

Torquay.—Contract No. 1 of main drainage scheme, involving large reinforced concrete pumping station, intercepting sewer, three main valley sewers, etc., for T.C.:—*Leightons (Contractors), Ltd., Leighton House, Darkes-ln., Potters Bar, £73,901.

Walsall.—Milk depot rear of Hednesford-st., for Walsall and District Co-operative Society, Ltd., Kenmare House, Bridge-st. Jeffries & Shipley, architects, Kings Court, Bridge-st.:—*Works Dept., Co-operative Society, Ltd., Elmore Green-rd., Bloxwich, Walsall.

Walton.—Widening and strengthening Walton Bridge where road crosses the Ribble, for Lancs C.C. and Preston C.C.:—‡Ormerod & Shields, Preston, £32,386.

Wantage.—24 houses, for U.D.C. C. Birdwood Willcocks, F.R.I.B.A., architect, 11, Friar-st., Reading:—

	(a)	(b)	(c)
Hoskings & Pond	£12,870	£13,994	£13,970
Boshers (Cholsey), Ltd.	11,356	13,030	12,905
E. C. Hughes	10,726	11,727	11,847
F. J. Minns	10,478	11,662	11,710
Francis Bros.	10,457	11,156	11,180
Newberry & Son	10,080	11,136	11,131
Beacon Construction Co.	9,990	11,966	11,936
W. J. Hallt	9,890	10,876	10,972
Wilsons (late tender)	9,480	10,126	10,006
*Reed & Co., Ltd.	8,694	9,823	9,660

(a) Cottages only.
(b) Total inclusive cost with ordinary type tiles.
(c) Total inclusive cost with Roman type tiles.
(Subject to approval of M.H.)

Whitley and Monkseaton.—Fencing at Hartley West End of approximately 624 lin. yds. 5-ft. Military-type fencing, approximately 179 lin. yds. 4-ft. post and rail fence, and repairs to existing fencing, for U.D.C. A. J. Rousell, A.M.Inst.C.E., S.:—*C. F. Thompson & Co., Links-av., Whitley Bay.

Willenhall.—Methodist church hall, for Trustees of Methodist Union. A. Brocklehurst & Co., architects, 10, Norfolk-st., Manchester:—*Biddulph & Thrift, Frost-st., Ettingshall, Wolverhampton.

Wolverhampton.—Erection of Prestwood-rd. council school, for E.C. R. B. Robinson, B.E.:—*A. M. Griffiths & Sons, Ltd., Thomas-st., Wolverhampton, £38,486.

Worcester.—Electrical installation at Backminster senior school, for Worcestershire E.C. A. V. Rowe, County Architect, 38, Foregate-st., Worcester:—*Abell & Smith's Electrical Co., 19, Angel-pl., Worcester, £249.

York.—Senior undenominated school, Earswick, for Joseph Rowntree Village Trust. Robert B. Hall, architect, 24, William-way, Letchworth:—*F. W. Plaxton, Seamer-rd., Scarborough, £26,733.

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